

**SIDE VIEW - PREFABRICATED 2 COLUMN BENT PIER**

SCALE: 3/16" = 1'-0"

NOTE: DIMENSIONS SHOWN ARE SPECIFIC TO EACH PIER  
 DIMENSIONS WILL VARY ON DIFFERENT BRIDGES  
 COLUMN SHEAR REINFORCEMENT NOT SHOWN FOR CLARITY

**ELEVATION - PREFABRICATED 2 COLUMN BENT PIER**

SCALE: 3/16" = 1'-0"

NOTE: DIMENSIONS SHOWN ARE SPECIFIC TO EACH PIER  
 DIMENSIONS WILL VARY ON DIFFERENT BRIDGES  
 COLUMN SHEAR REINFORCEMENT NOT SHOWN FOR CLARITY

REVISIONS

NO.	DATE	APPR.	REMARKS

**UTAH DEPARTMENT OF TRANSPORTATION**  
 STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
 SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
 CHAIRMAN STANDARDS COMMITTEE  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 DEPUTY DIRECTOR

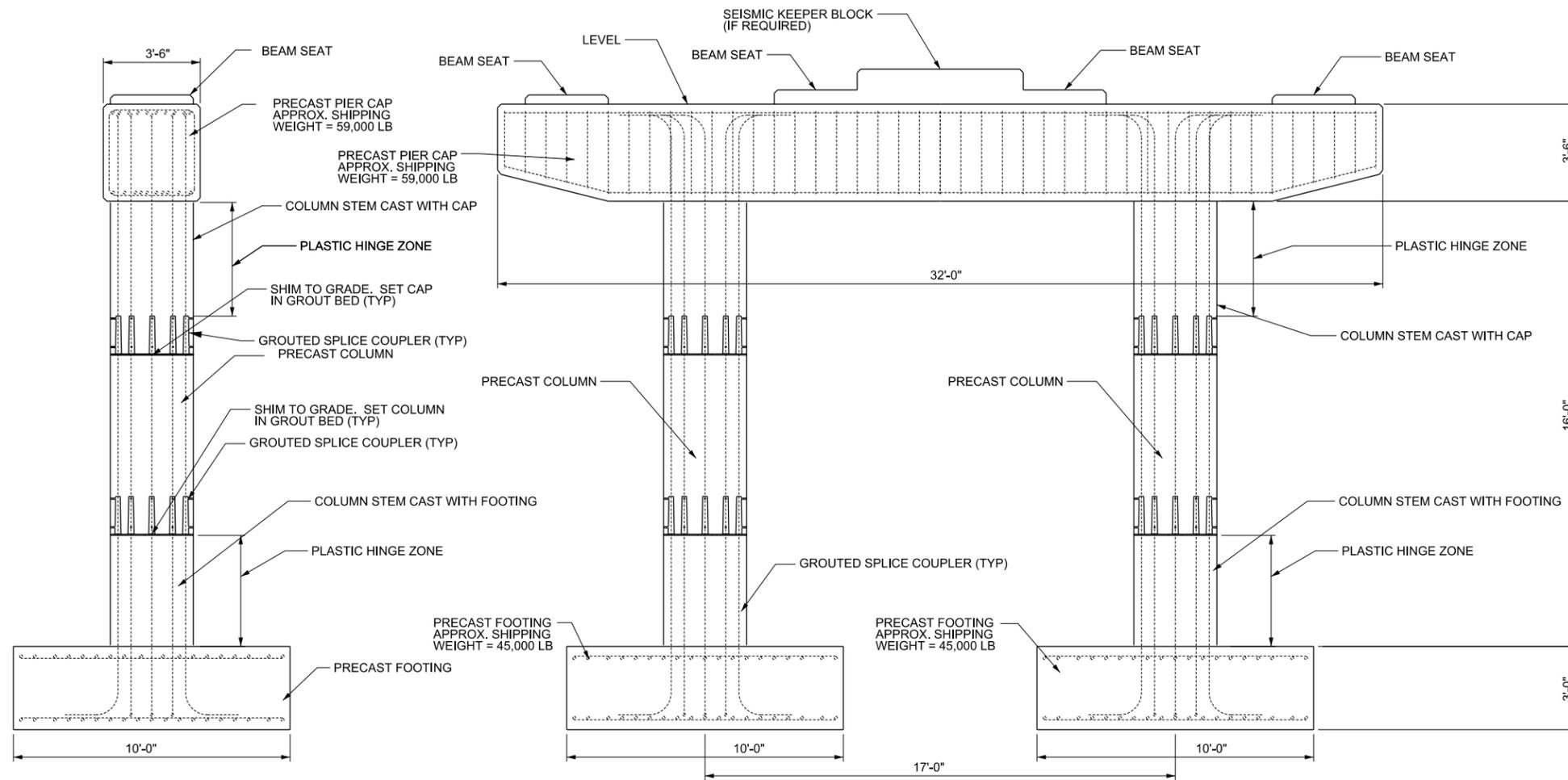
STANDARD PRECAST PIERS  
 2 COLUMN BENT PIER  
 FOR LOW SEISMIC ZONES

STD. DWG. NO.

P-1

DRAFT - NOT RELEASED FOR CONSTRUCTION

\$\$\$\$\$\$  
 \$\$\$\$\$\$



**SIDE VIEW - PREFABRICATED 2 COLUMN BENT PIER**

SCALE: 3/16" = 1'-0"

NOTE: DIMENSIONS SHOWN ARE SPECIFIC TO EACH PIER  
 DIMENSIONS WILL VARY ON DIFFERENT BRIDGES  
 COLUMN SHEAR REINFORCEMENT NOT SHOWN FOR CLARITY

**DETAILS FOR HIGH SEISMIC ZONES**

**ELEVATION - PREFABRICATED 2 COLUMN BENT PIER**

SCALE: 3/16" = 1'-0"

NOTE: DIMENSIONS SHOWN ARE SPECIFIC TO EACH PIER  
 DIMENSIONS WILL VARY ON DIFFERENT BRIDGES  
 COLUMN SHEAR REINFORCEMENT NOT SHOWN FOR CLARITY

**DETAILS FOR HIGH SEISMIC ZONES**

REVISIONS

NO.	DATE	APPR.	REMARKS

**UTAH DEPARTMENT OF TRANSPORTATION**  
 STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
 SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
 CHAIRMAN STANDARDS COMMITTEE  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 DEPUTY DIRECTOR

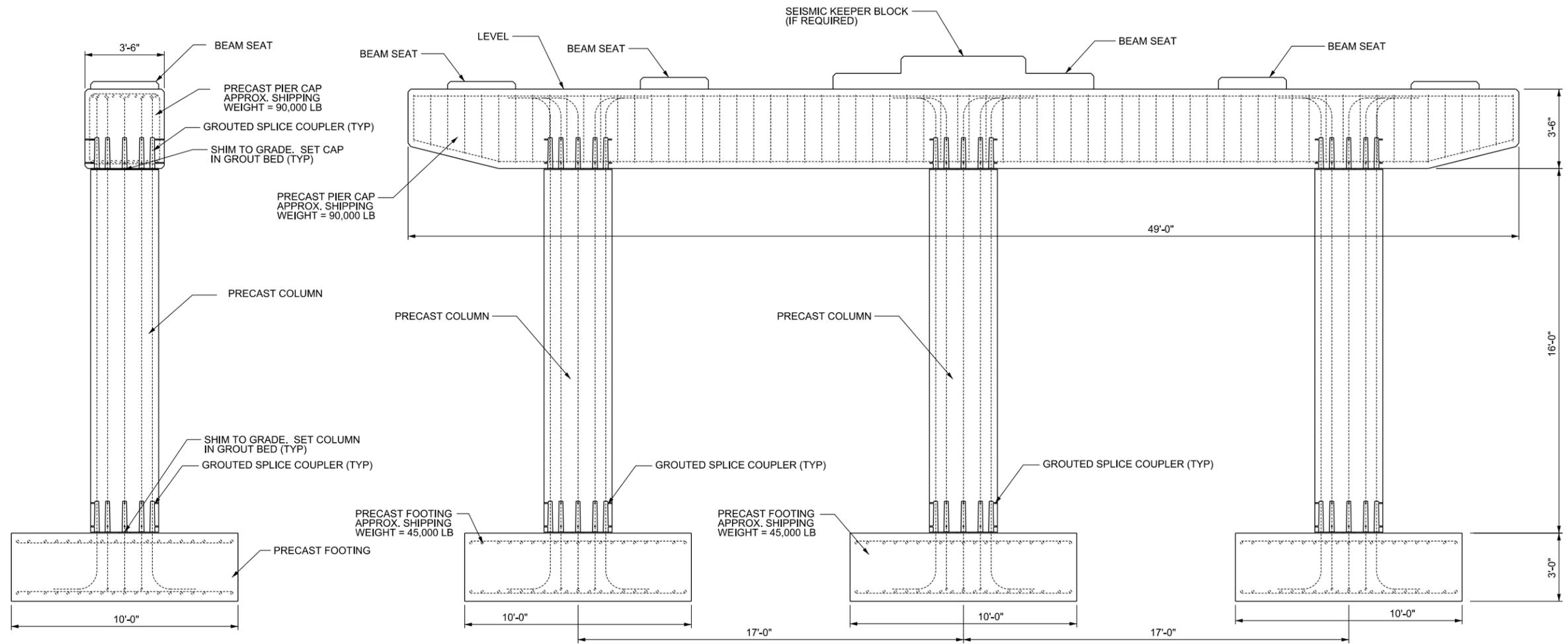
**STANDARD PRECAST PIERS  
 2 COLUMN BENT PIER  
 FOR HIGH SEISMIC ZONES**

STD. DWG. NO.

**P-2**

**DRAFT - NOT RELEASED FOR CONSTRUCTION**

\$\$\$\$\$\$  
 \$\$\$\$\$\$



**SIDE VIEW**  
**PREFABRICATED 3 COLUMN BENT PIER**  
 SCALE: 3/16" = 1'-0"

NOTE: DIMENSIONS SHOWN ARE SPECIFIC TO EACH PIER  
 DIMENSIONS WILL VARY ON DIFFERENT BRIDGES  
 COLUMN SHEAR REINFORCEMENT NOT SHOWN FOR CLARITY

**ELEVATION**  
**PREFABRICATED 3 COLUMN BENT PIER**  
 SCALE: 3/16" = 1'-0"

NOTE: DIMENSIONS SHOWN ARE SPECIFIC TO EACH PIER  
 DIMENSIONS WILL VARY ON DIFFERENT BRIDGES  
 COLUMN SHEAR REINFORCEMENT NOT SHOWN FOR CLARITY

REVISIONS

NO.	DATE	APPR.	REMARKS

**UTAH DEPARTMENT OF TRANSPORTATION**  
 STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
 SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL	DATE
CHAIRMAN STANDARDS COMMITTEE	DATE
APPROVED	
DEPUTY DIRECTOR	DATE

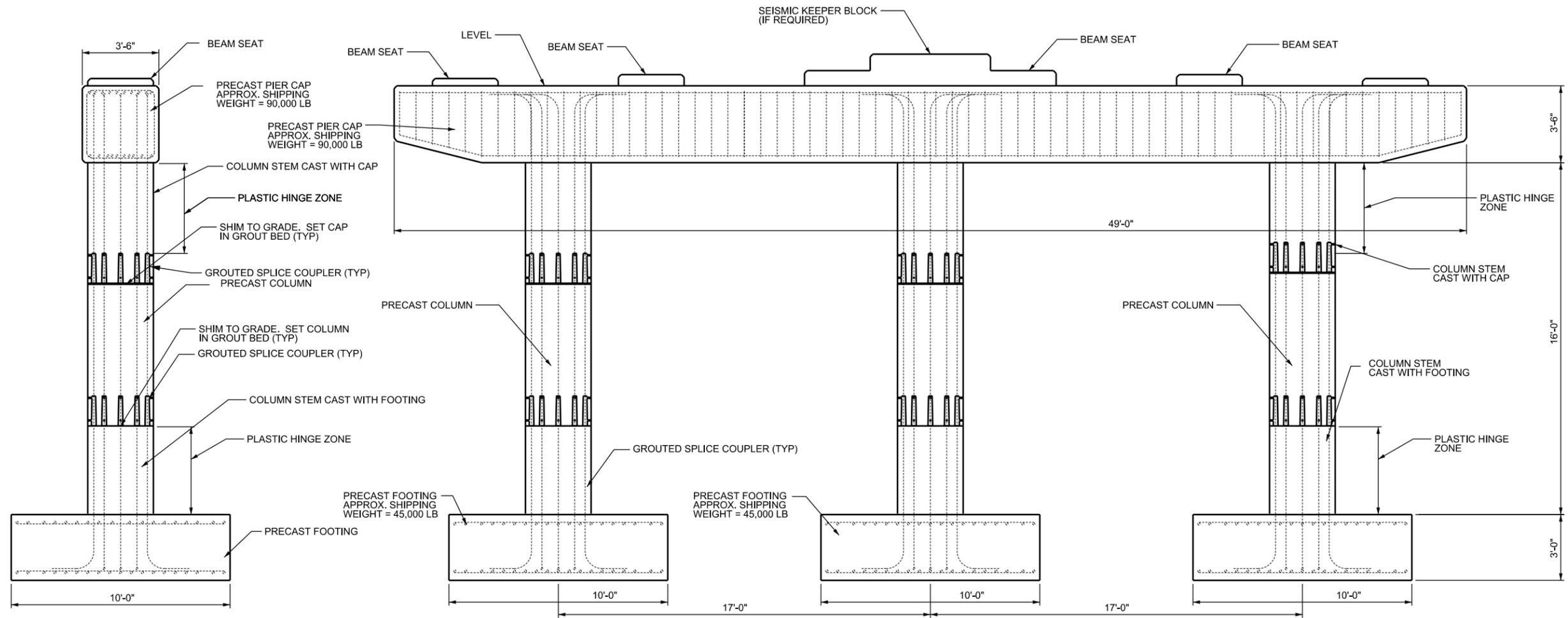
**STANDARD PRECAST PIERS**  
**3 COLUMN BENT PIER**  
**FOR LOW SEISMIC ZONES**

STD. DWG. NO.

**P-3**

**DRAFT - NOT RELEASED FOR CONSTRUCTION**

2014-08-28 10:58:58 AM  
 2014-08-28 10:58:58 AM



**SIDE VIEW**  
**PREFABRICATED 3 COLUMN BENT PIER**  
 SCALE: 3/16" = 1'-0"

NOTE: DIMENSIONS SHOWN ARE SPECIFIC TO EACH PIER  
 DIMENSIONS WILL VARY ON DIFFERENT BRIDGES  
 COLUMN SHEAR REINFORCEMENT NOT SHOWN FOR CLARITY

**DETAILS FOR HIGH SEISMIC ZONES**

**ELEVATION**  
**PREFABRICATED 3 COLUMN BENT PIER**  
 SCALE: 3/16" = 1'-0"

NOTE: DIMENSIONS SHOWN ARE SPECIFIC TO EACH PIER  
 DIMENSIONS WILL VARY ON DIFFERENT BRIDGES  
 COLUMN SHEAR REINFORCEMENT NOT SHOWN FOR CLARITY

**DETAILS FOR HIGH SEISMIC ZONES**

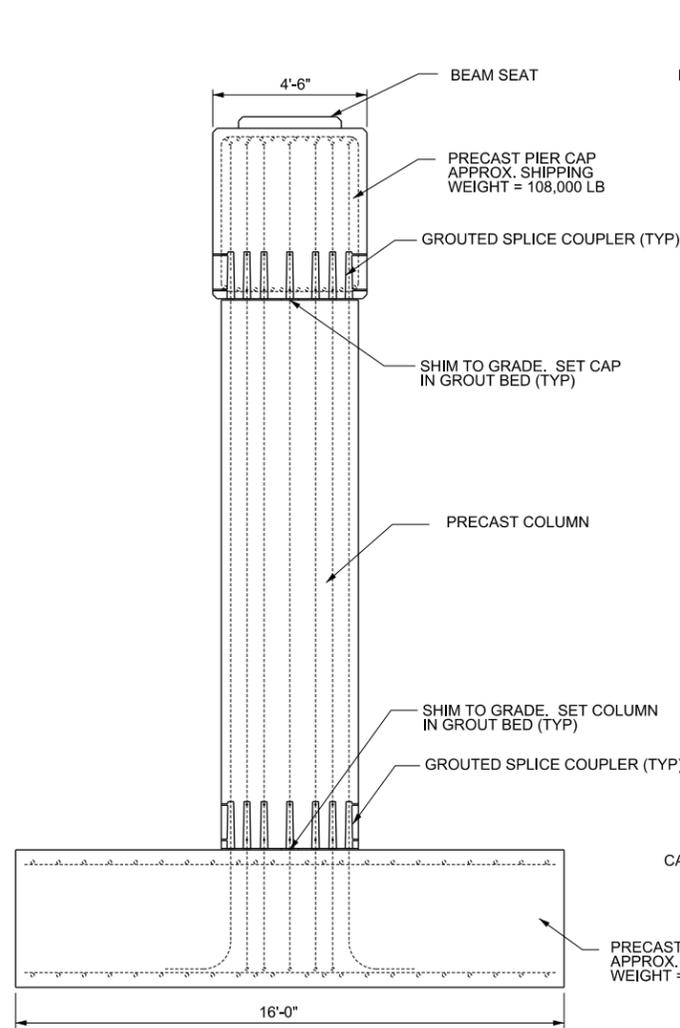
NO.	DATE	APPR.	REMARKS

**UTAH DEPARTMENT OF TRANSPORTATION**  
 STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
 SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
 CHAIRMAN STANDARDS COMMITTEE  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 DEPUTY DIRECTOR

**STANDARD PRECAST PIERS**  
**3 COLUMN BENT PIER**  
**FOR HIGH SEISMIC ZONES**

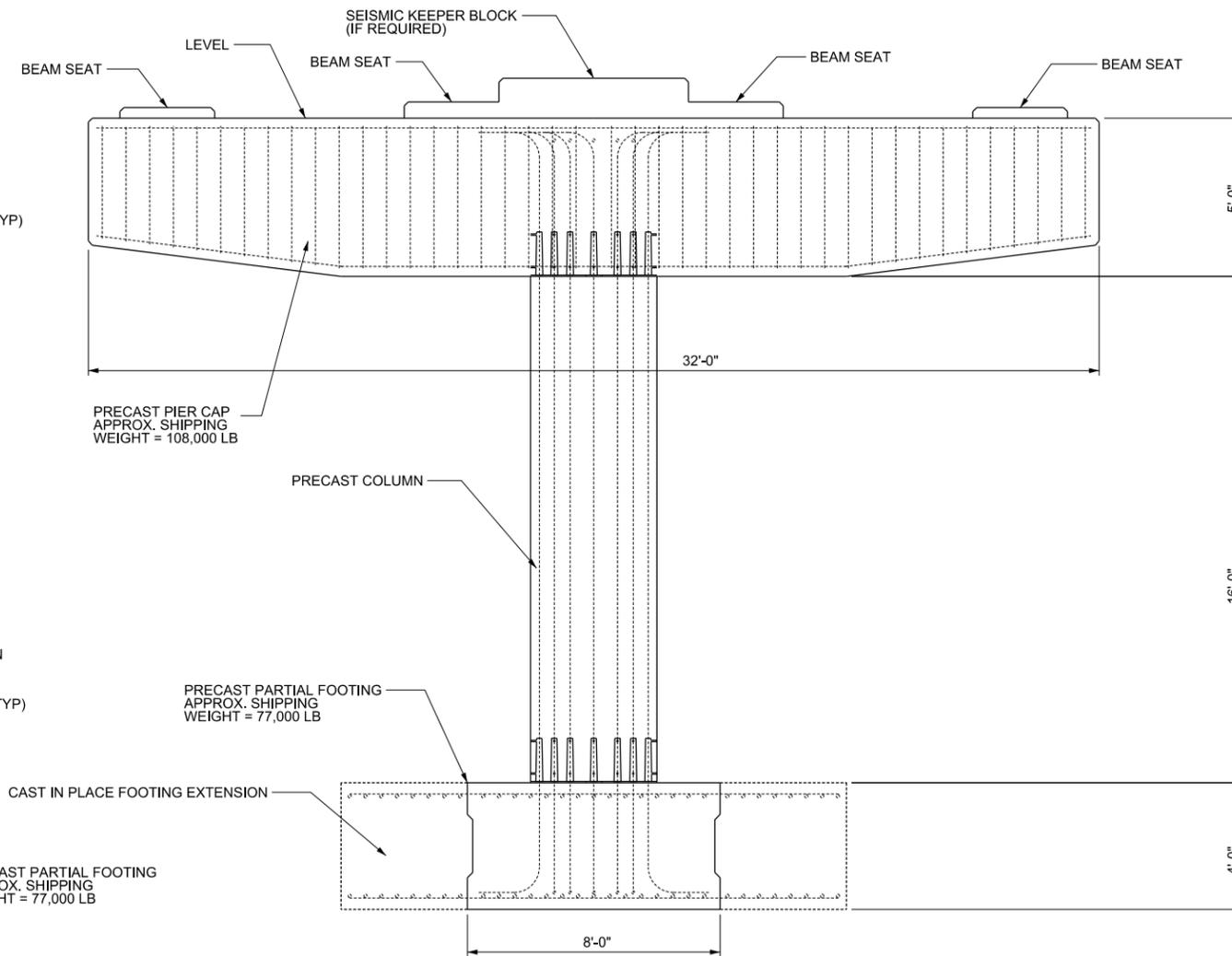
STD. DWG. NO.  
**P-4**



**SIDE VIEW - PREFABRICATED HAMMERHEAD PIER**

SCALE: 3/16" = 1'-0"

NOTE: DIMENSIONS SHOWN ARE SPECIFIC TO EACH PIER  
DIMENSIONS WILL VARY ON DIFFERENT BRIDGES  
COLUMN SHEAR REINFORCEMENT NOT SHOWN FOR CLARITY



**ELEVATION - PREFABRICATED HAMMERHEAD PIER**

SCALE: 3/16" = 1'-0"

NOTE: DIMENSIONS SHOWN ARE SPECIFIC TO EACH PIER  
DIMENSIONS WILL VARY ON DIFFERENT BRIDGES  
COLUMN SHEAR REINFORCEMENT NOT SHOWN FOR CLARITY

REVISIONS

NO.	DATE	APPR.	REMARKS

**UTAH DEPARTMENT OF TRANSPORTATION**  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
CHAIRMAN STANDARDS COMMITTEE  
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DEPUTY DIRECTOR

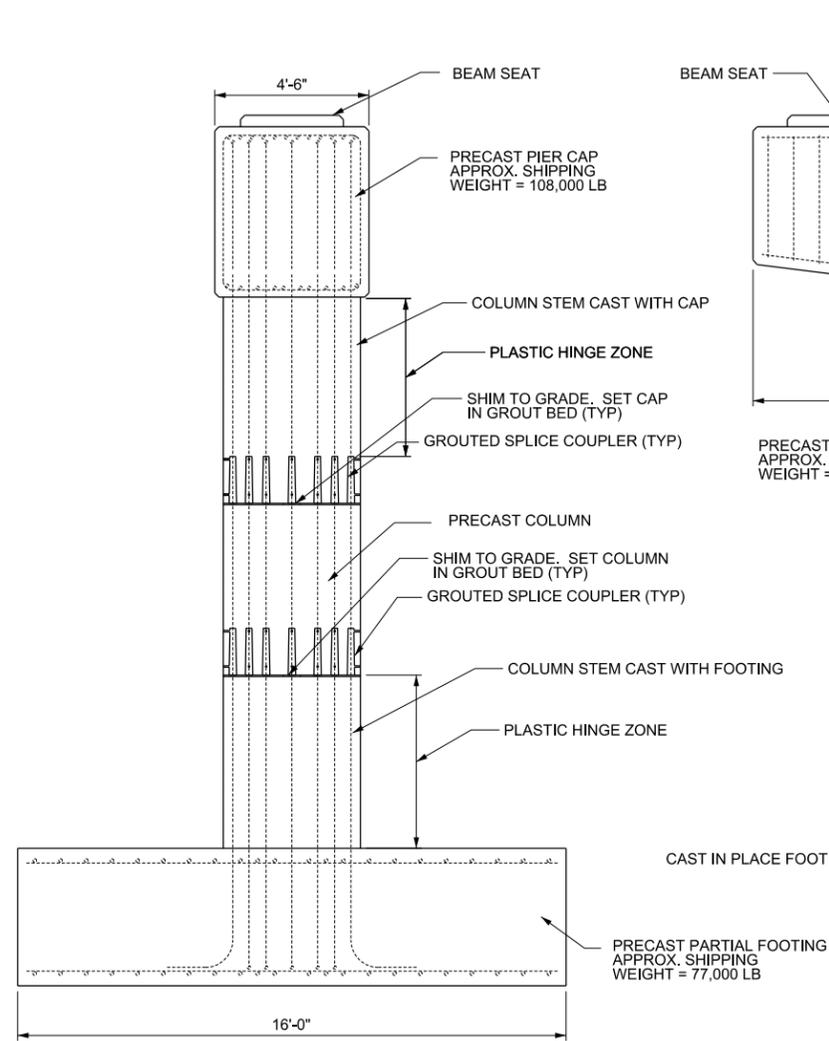
STANDARD PRECAST PIERS  
HAMMER HEAD PIER  
FOR LOW SEISMIC ZONES

STD. DWG. NO.

P-5

DRAFT - NOT RELEASED FOR CONSTRUCTION

\$\$\$\$\$

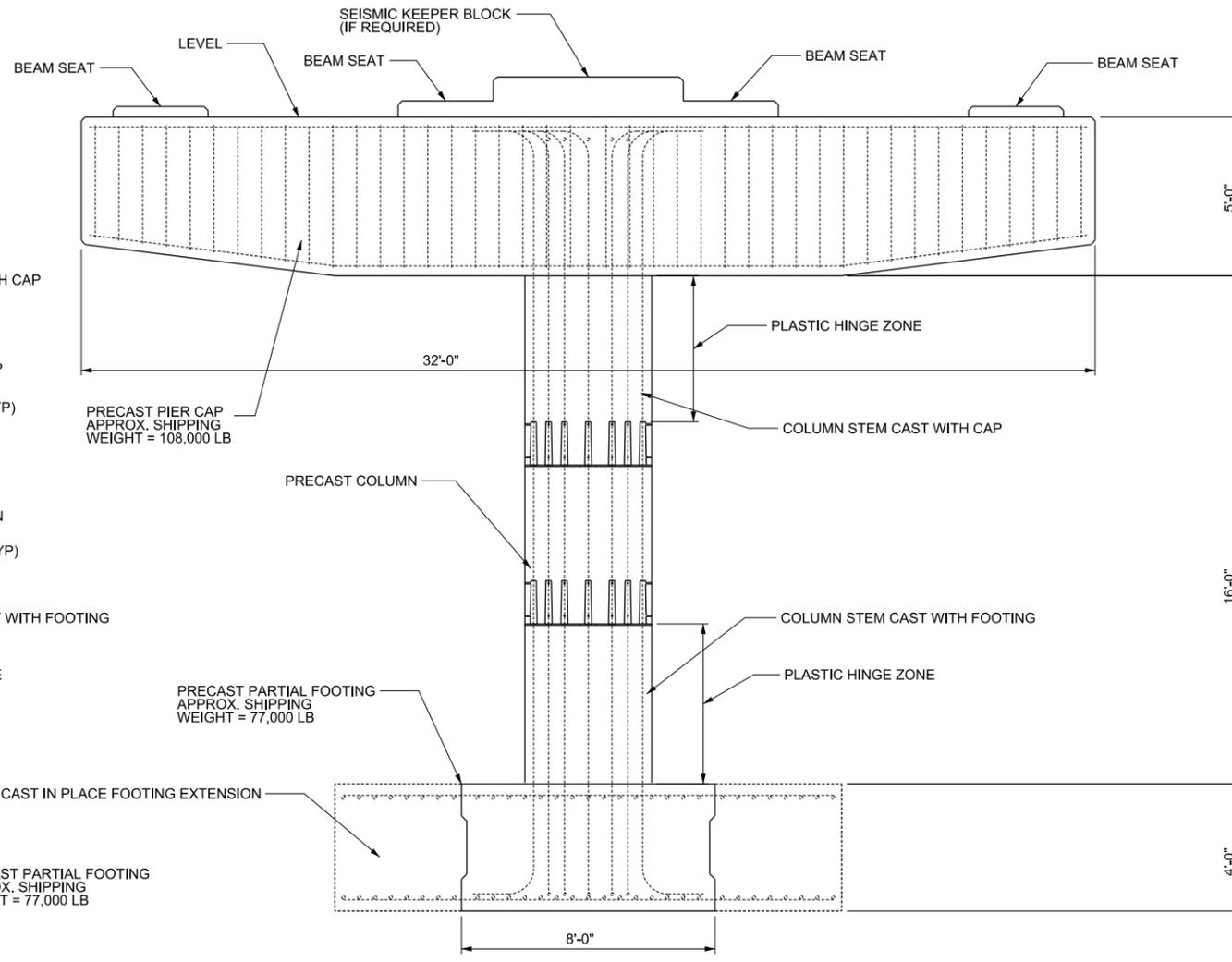


**SIDE VIEW - PREFABRICATED HAMMERHEAD PIER**

SCALE: 3/16" = 1'-0"

NOTE: DIMENSIONS SHOWN ARE SPECIFIC TO EACH PIER  
DIMENSIONS WILL VARY ON DIFFERENT BRIDGES  
COLUMN SHEAR REINFORCEMENT NOT SHOWN FOR CLARITY

**DETAILS FOR HIGH SEISMIC ZONES**



**ELEVATION - PREFABRICATED HAMMERHEAD PIER**

SCALE: 3/16" = 1'-0"

NOTE: DIMENSIONS SHOWN ARE SPECIFIC TO EACH PIER  
DIMENSIONS WILL VARY ON DIFFERENT BRIDGES  
COLUMN SHEAR REINFORCEMENT NOT SHOWN FOR CLARITY

**DETAILS FOR HIGH SEISMIC ZONES**

REVISIONS

NO.	DATE	APPR.	REMARKS

**UTAH DEPARTMENT OF TRANSPORTATION**  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
CHAIRMAN STANDARDS COMMITTEE  
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DEPUTY DIRECTOR

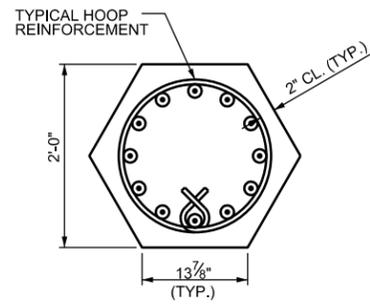
**STANDARD PRECAST PIERS  
HAMMER HEAD PIER  
FOR HIGH SEISMIC ZONES**

STD. DWG. NO.

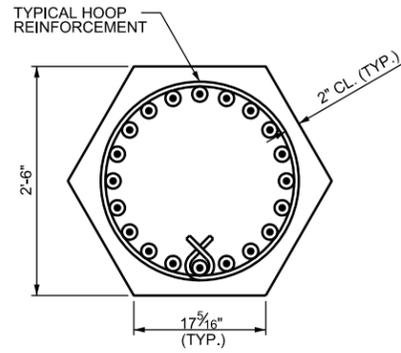
**P-6**

**DRAFT - NOT RELEASED FOR CONSTRUCTION**

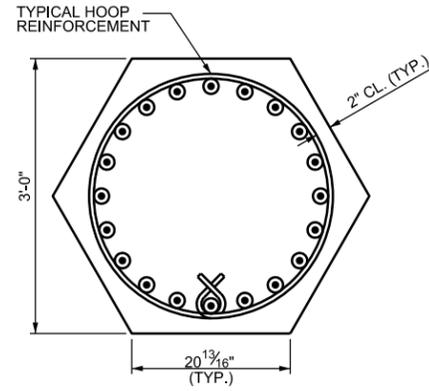
\$\$\$\$\$



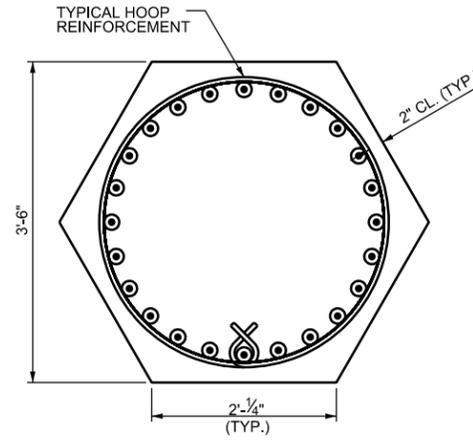
TYP. 2'-0" HEXAGONAL COLUMN SECTION



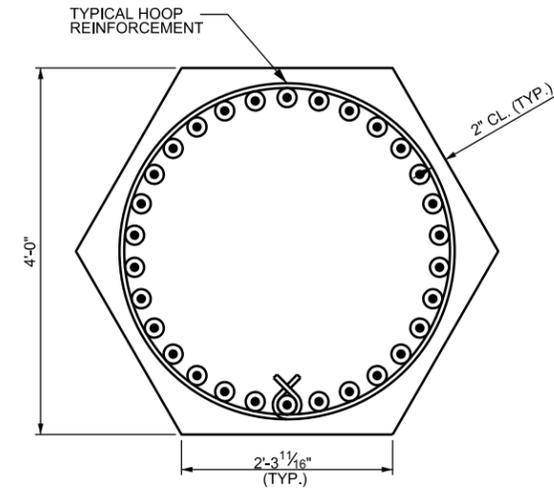
TYP. 2'-6" HEXAGONAL COLUMN SECTION



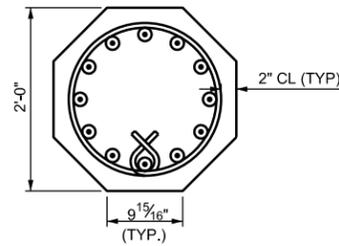
TYP. 3'-0" HEXAGONAL COLUMN SECTION



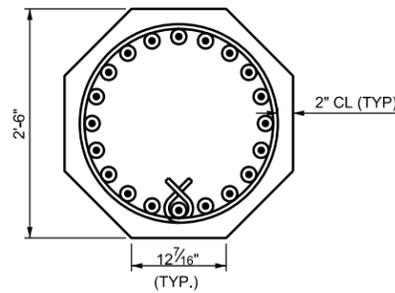
TYP. 3'-6" HEXAGONAL COLUMN SECTION



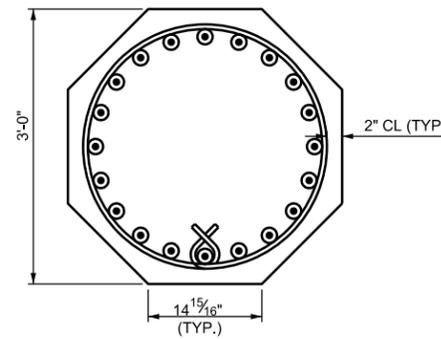
TYP. 4'-0" HEXAGONAL COLUMN SECTION



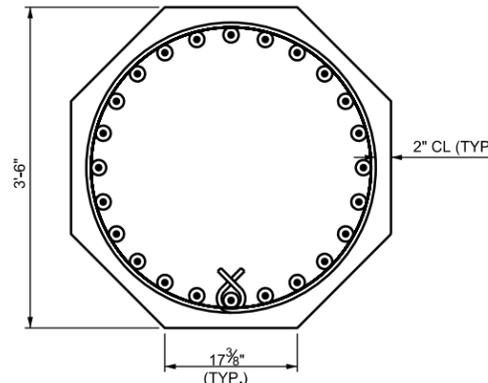
TYP. 2'-0" OCTAGONAL COLUMN SECTION



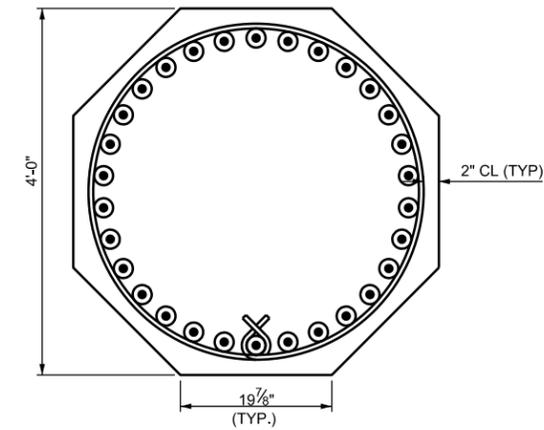
(TYP.) 2'-6" OCTAGONAL COLUMN SECTION



(TYP.) 3'-0" OCTAGONAL COLUMN SECTION



(TYP.) 3'-6" OCTAGONAL COLUMN SECTION



(TYP.) 4'-0" OCTAGONAL COLUMN SECTION

REVISIONS			
NO.	DATE	APPR.	REMARKS

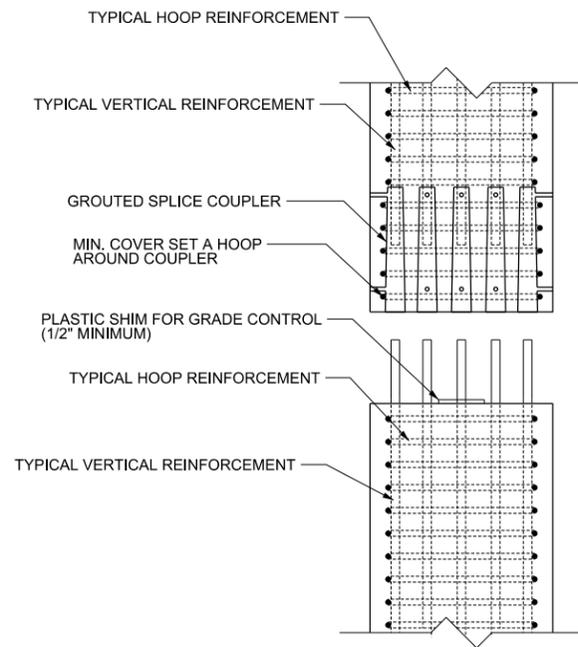
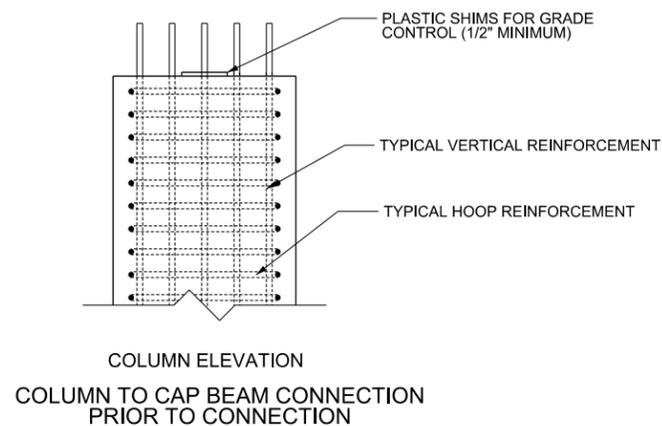
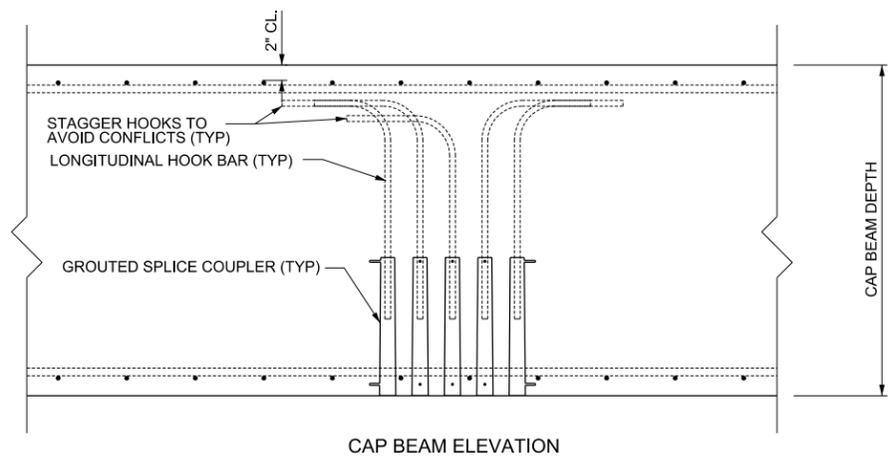
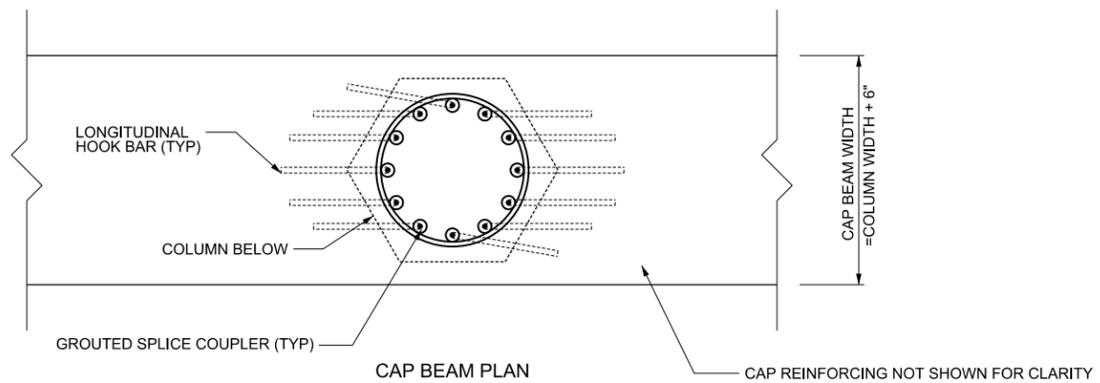
UTAH DEPARTMENT OF TRANSPORTATION  
 STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
 SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
 CHAIRMAN STANDARDS COMMITTEE  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 DEPUTY DIRECTOR

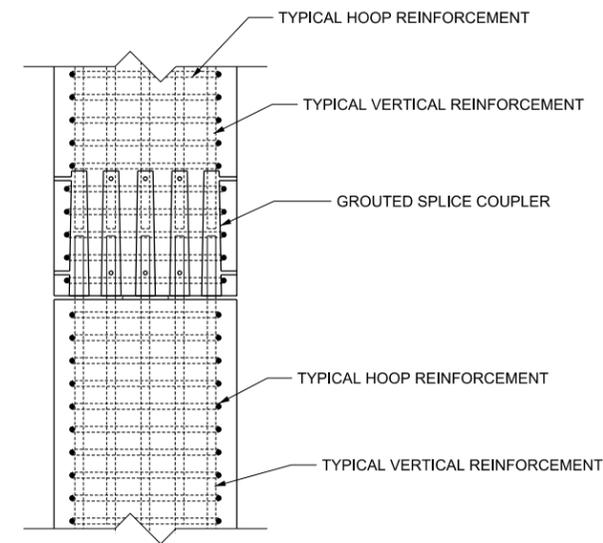
STANDARD PRECAST COLUMNS  
 TYPICAL COLUMN SECTIONS

STD. DWG. NO. P-7

\*\*\*file\*\*  
 \*\*\*date\*\*

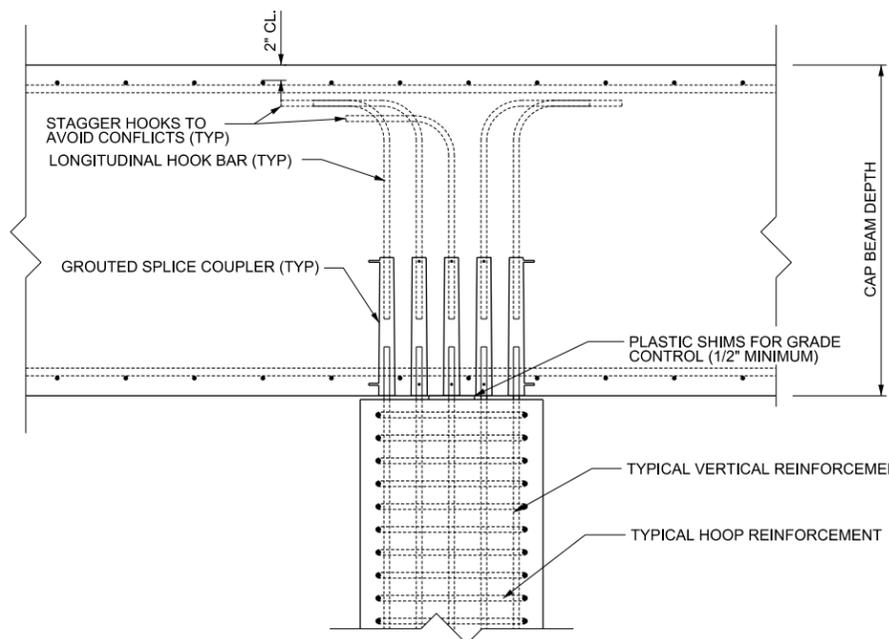


COLUMN TO COLUMN CONNECTION PRIOR TO CONNECTION



COLUMN TO COLUMN CONNECTION AFTER CONNECTION

NOTE: COLUMN TO COLUMN SPLICE SHOWN, COLUMN TO FOOTING DETAILS SIMILAR



COLUMN TO CAP BEAM CONNECTION AFTER CONNECTION

REVISIONS

NO.	DATE	APPR.	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
CHAIRMAN STANDARDS COMMITTEE  
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DEPUTY DIRECTOR

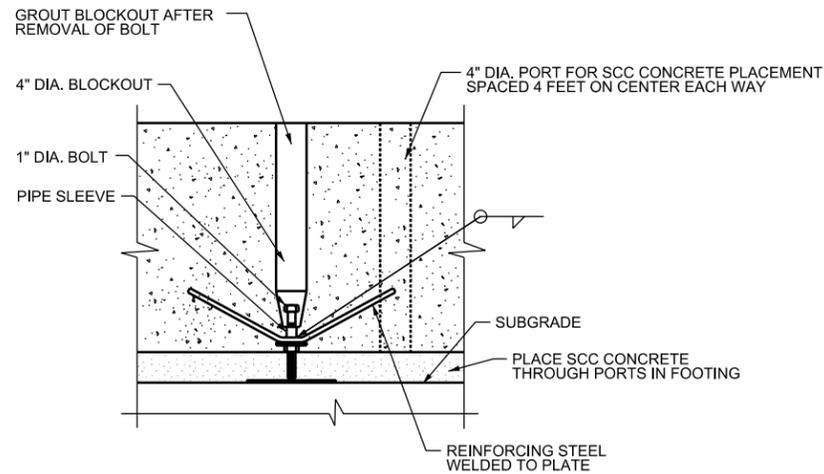
STANDARD PRECAST PIERS  
TYPICAL DETAILS

STD. DWG. NO.

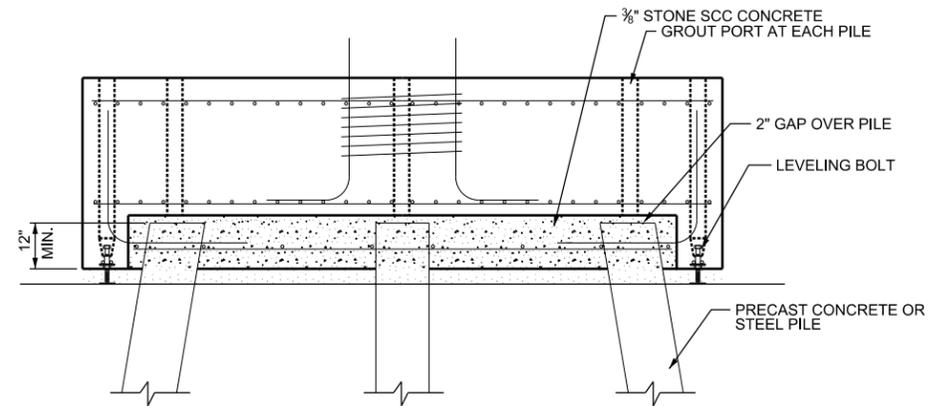
P-8

DRAFT - NOT RELEASED FOR CONSTRUCTION

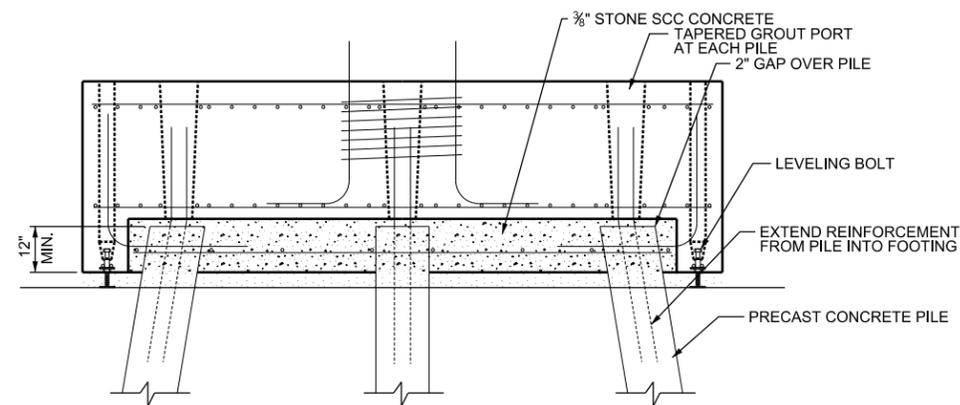
S:\dwt\p8



NOTES: REMOVE BOLT AFTER BASE GROUT HAS SET  
 ALTERNATE DEVICES MAY BE SUBSTITUTED BY THE CONTRACTOR  
 WITH THE APPROVAL FROM THE ENGINEER  
**SPREAD FOOTING INSTALLATION DETAIL**

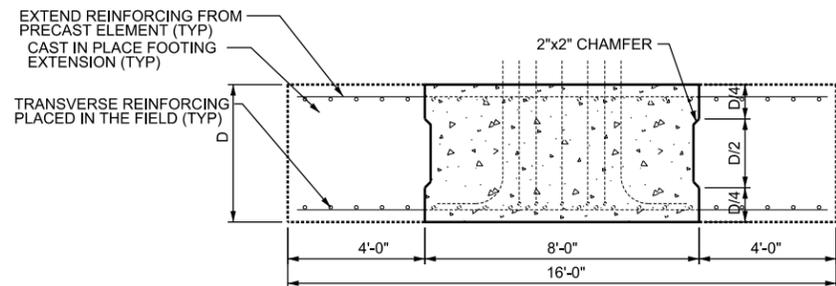
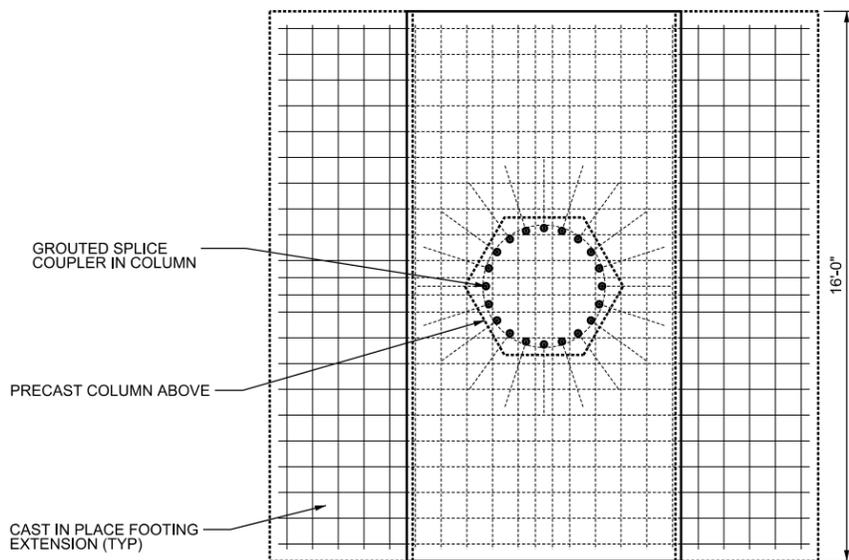


**PRECAST FOOTING ON PILES  
 WITHOUT PILE UPLIFT**



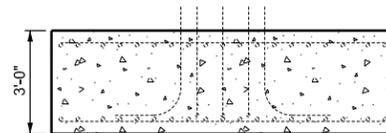
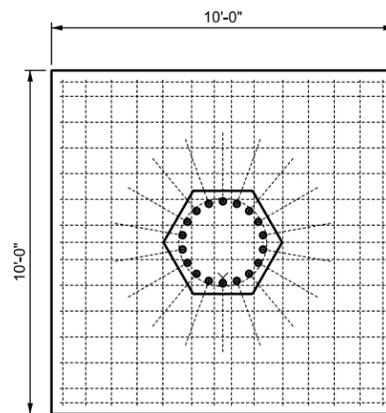
**PRECAST FOOTING ON PILES  
 WITH PILE UPLIFT**

NOTE: STEEL PILE DETAILS ARE SIMILAR.  
 WELDABLE REINFORCING STEEL BARS  
 CAN BE FIELD WELDED TO THE PILE  
 WEB AFTER PILE CUT-OFF



APPROXIMATE SHIPPING WEIGHT = 76,800 LB.  
**PARTIAL PRECAST SPREAD FOOTING**

NOTE: DIMENSIONS SHOWN ARE NOT TYPICAL. DETAILS WILL VARY WITH EACH SUBSTRUCTURE UNIT



APPROXIMATE SHIPPING WEIGHT = 45,000 LB.

**PRECAST SPREAD FOOTING**

NOTE: DIMENSIONS SHOWN ARE NOT TYPICAL. DETAILS WILL VARY WITH EACH SUBSTRUCTURE UNIT

REVISIONS

NO.	DATE	APPR.	REMARKS

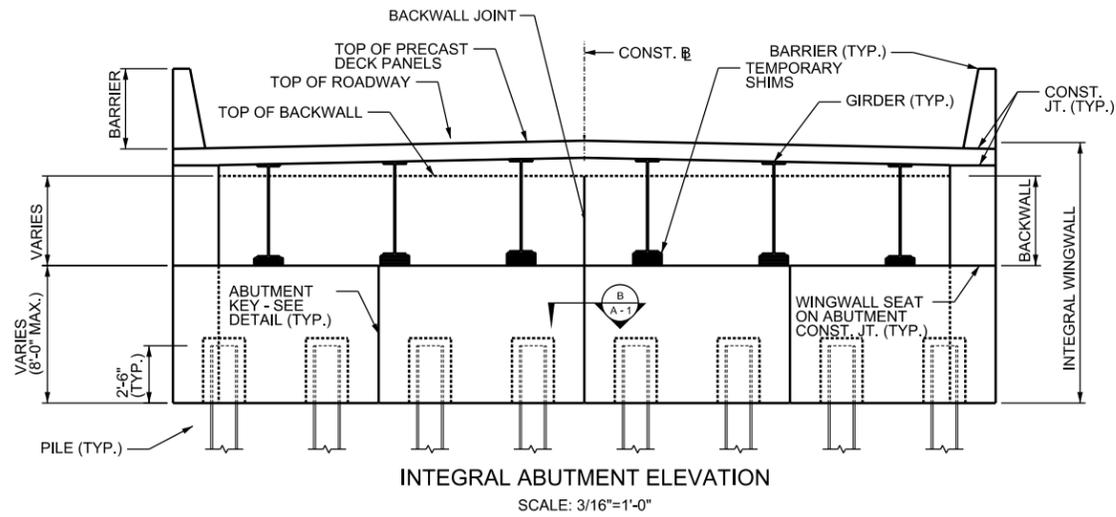
**UTAH DEPARTMENT OF TRANSPORTATION**  
 STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
 SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
 CHAIRMAN STANDARDS COMMITTEE  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 DEPUTY DIRECTOR

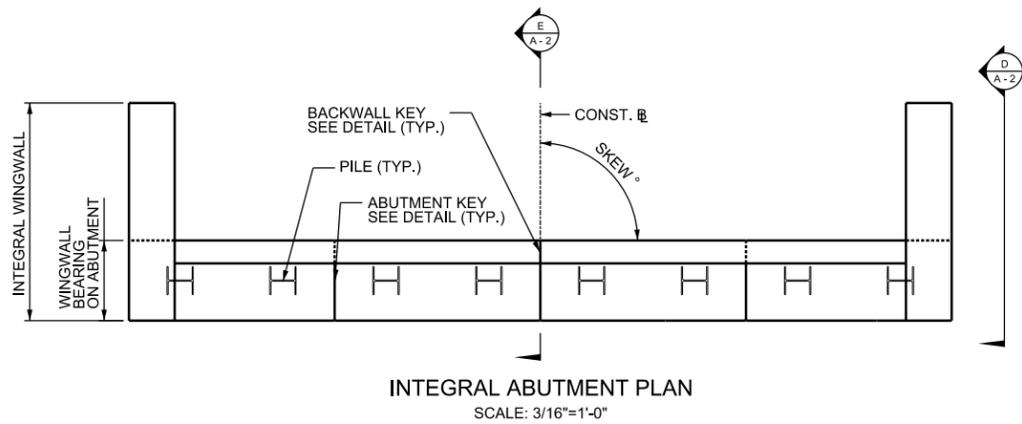
**STANDARD PRECAST FOOTINGS  
 TYPICAL DETAILS**

STD. DWG. NO.

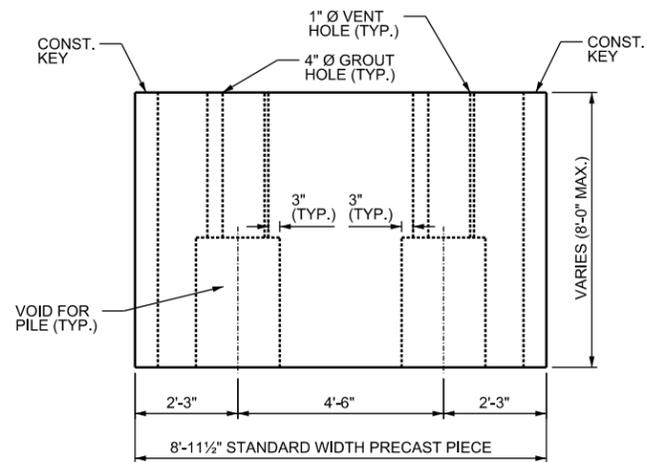
**F-1**



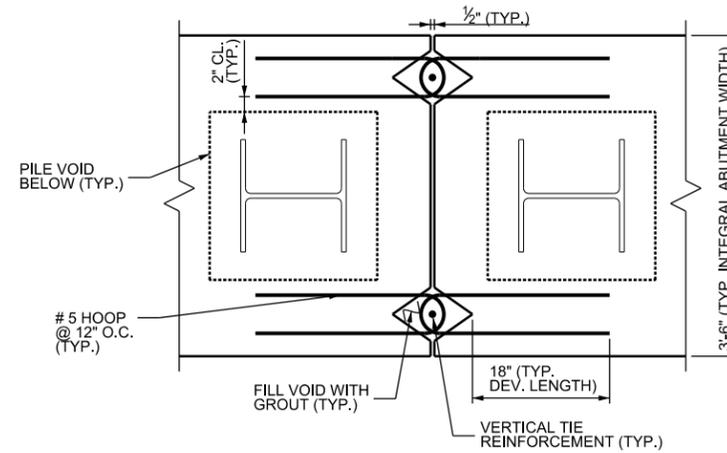
INTEGRAL ABUTMENT ELEVATION  
SCALE: 3/16"=1'-0"



INTEGRAL ABUTMENT PLAN  
SCALE: 3/16"=1'-0"



(A) ABUTMENT PANEL ELEVATION  
SCALE: 1/4"=1'-0"



(B) ABUTMENT SHEAR KEY  
SCALE: 1/2"=1'-0"  
NOTE: ABUTMENT REINFORCEMENT NOT SHOWN FOR CLARITY

NO.	DATE	APPR.	REMARKS

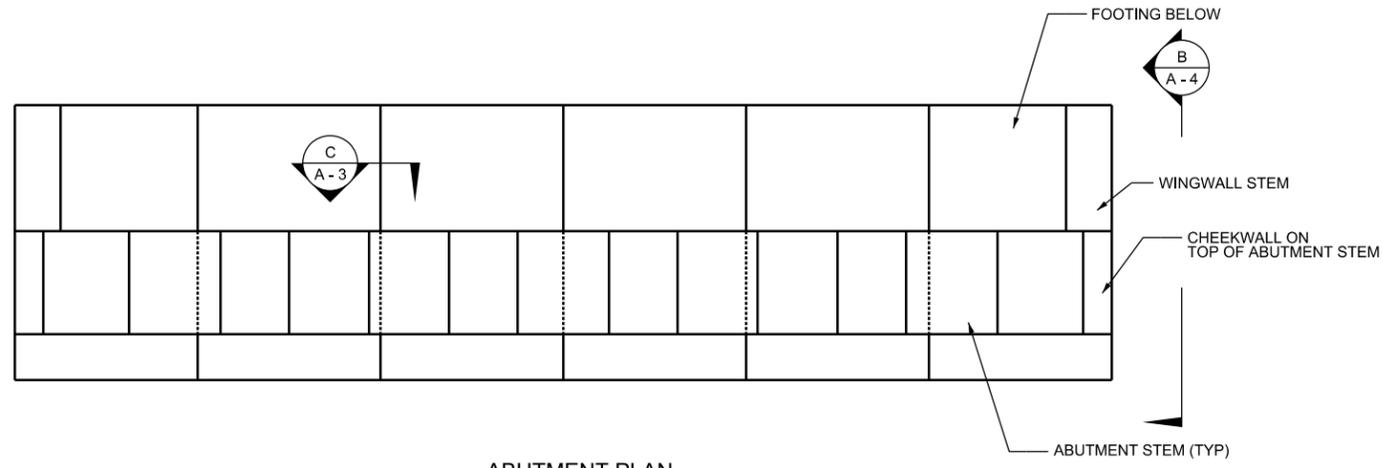
UTAH DEPARTMENT OF TRANSPORTATION  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
CHAIRMAN STANDARDS COMMITTEE  
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DEPUTY DIRECTOR

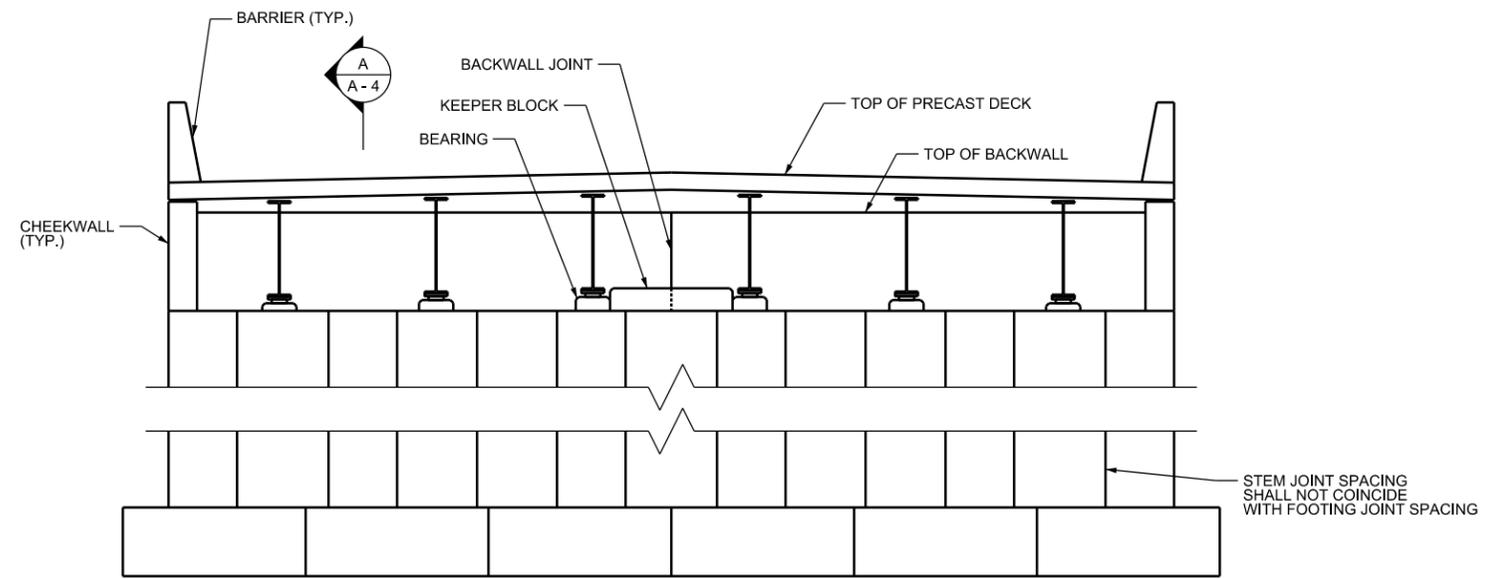
PRECAST STANDARD INTEGRAL  
ABUTMENT TYPICAL DETAILS

STD. DWG. NO.  
A - 1

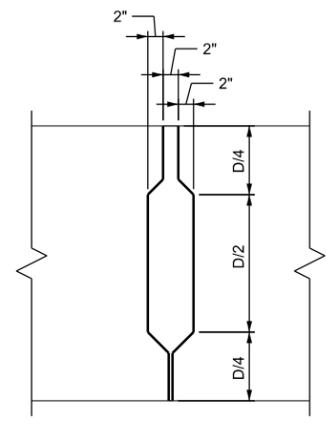




ABUTMENT PLAN  
SCALE: 1/8"=1'-0"



ABUTMENT ELEVATION  
SCALE: 1/8"=1'-0"



FOOTING KEY  
SCALE: 1/2"=1'-0"

NOTE: FOOTING REINFORCEMENT NOT SHOWN FOR CLARITY

REVISIONS

NO.	DATE	APPR.	REMARKS

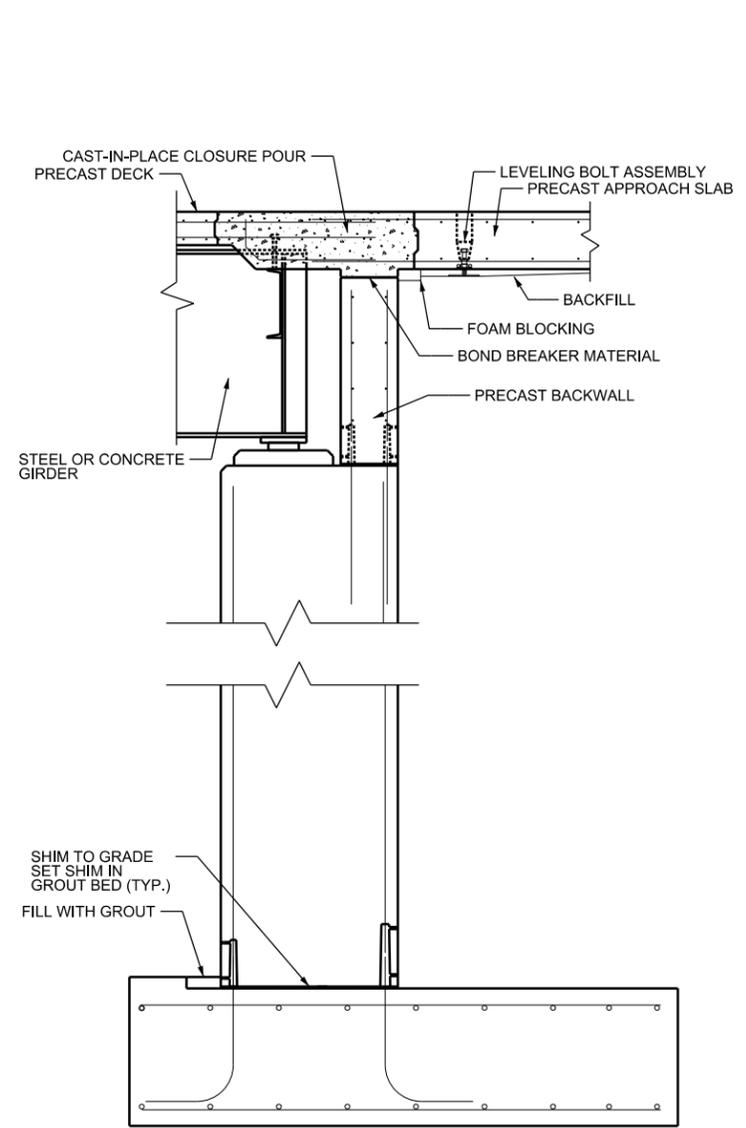
UTAH DEPARTMENT OF TRANSPORTATION  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL	DATE
CHAIRMAN STANDARDS COMMITTEE	DATE
APPROVED	DATE
DEPUTY DIRECTOR	DATE

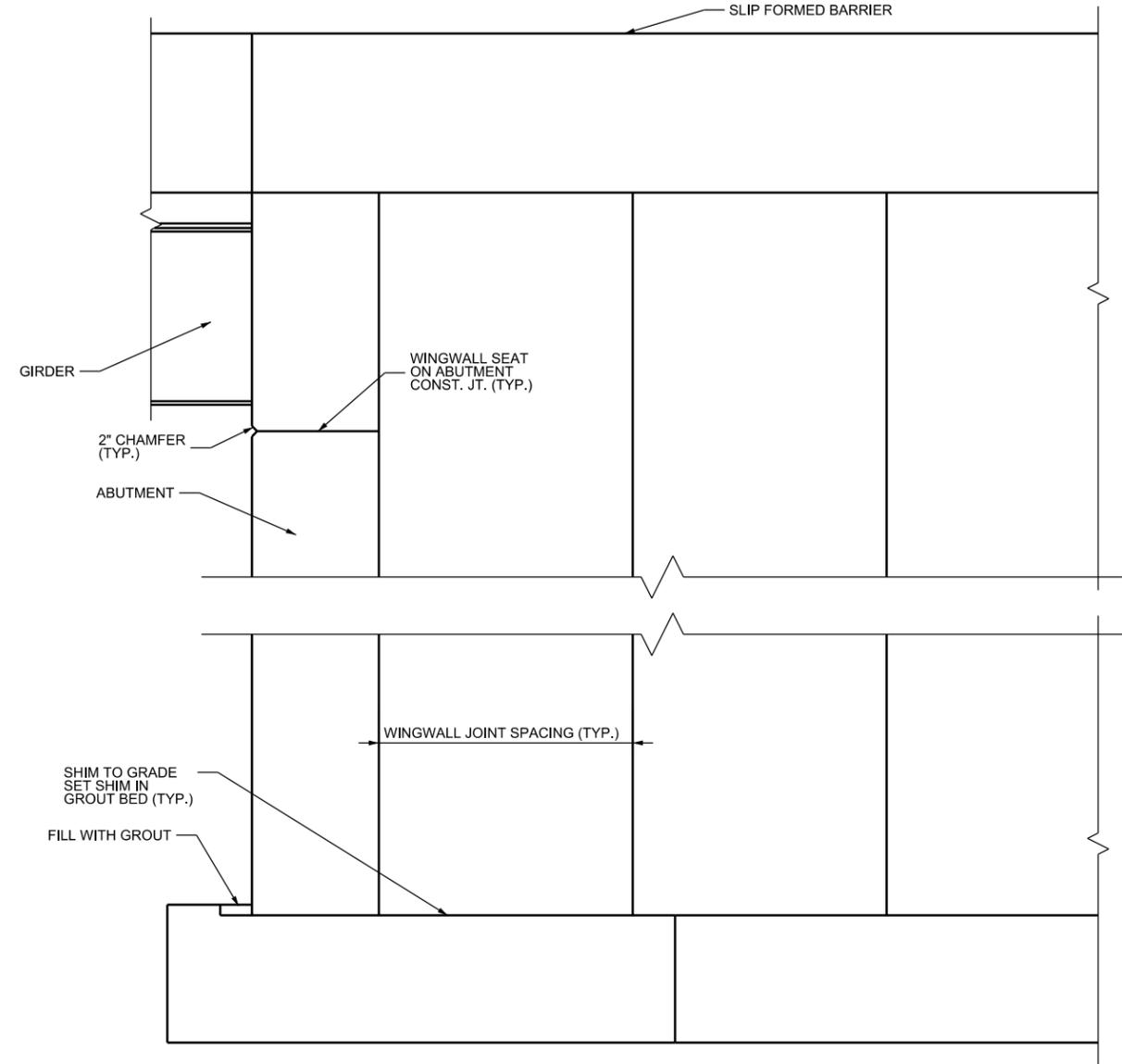
STANDARD PRECAST CANTILEVER  
ABUTMENT TYPICAL DETAILS

STD. DWG. NO.  
A - 3

\$



(A) ABUTMENT SECTION  
SCALE: 1/4"=1'-0"



(B) ABUTMENT SIDE ELEVATION  
SCALE: 1/4"=1'-0"

REVISIONS

NO.	DATE	APPR.	REMARKS

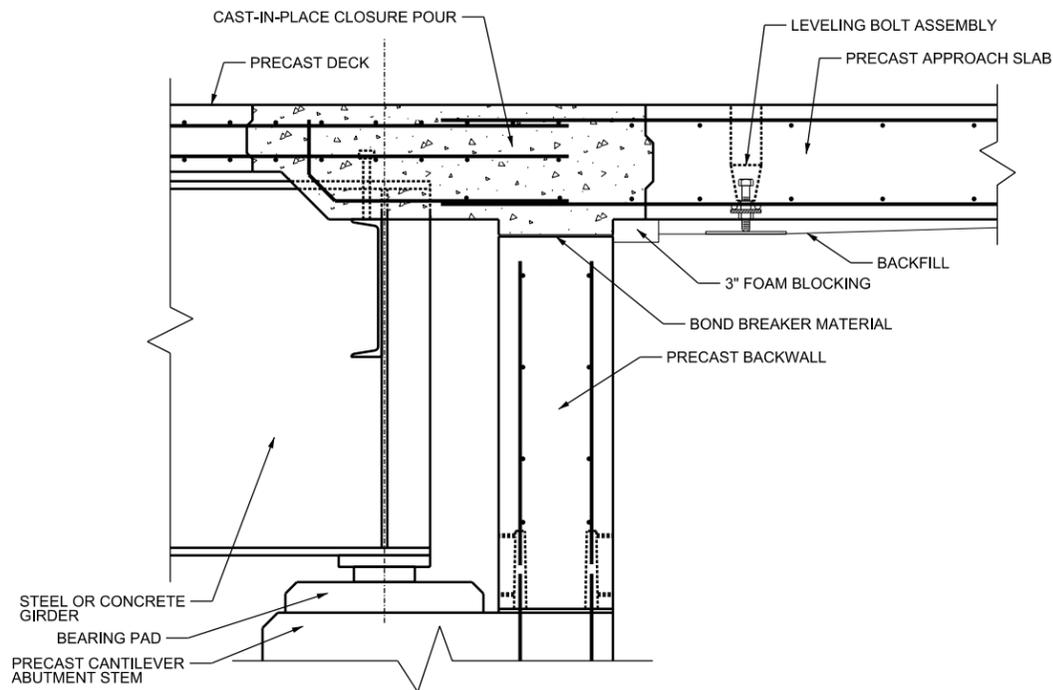
UTAH DEPARTMENT OF TRANSPORTATION  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
CHAIRMAN STANDARDS COMMITTEE  
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DEPUTY DIRECTOR

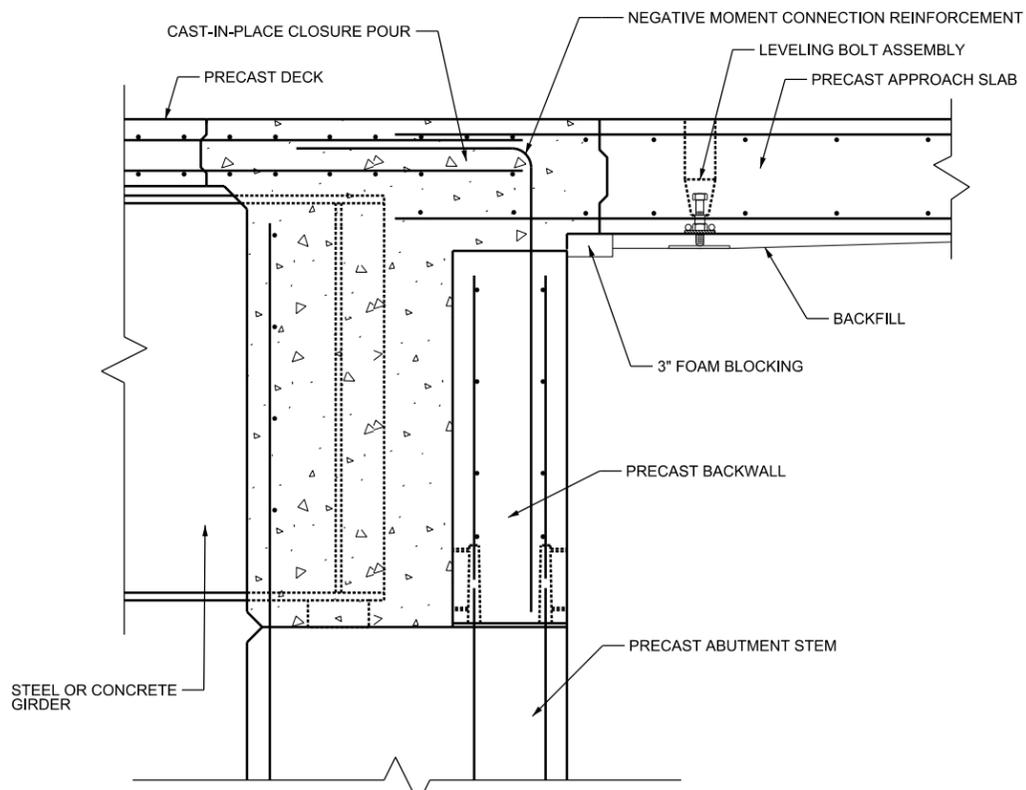
STANDARD PRECAST CANTILEVER  
ABUTMENT TYPICAL DETAILS

STD. DWG. NO.  
A - 4

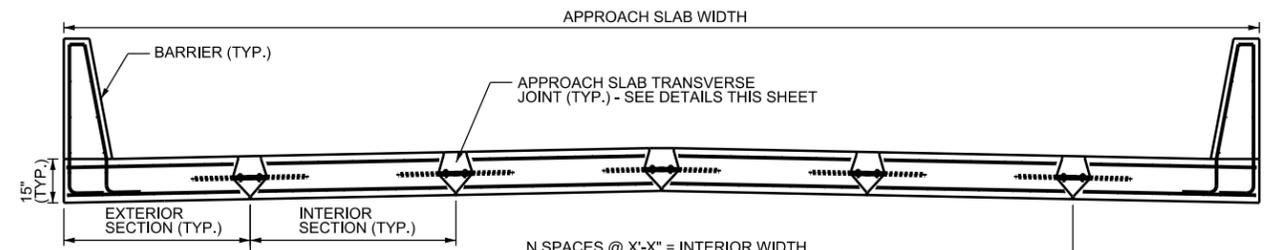
\$



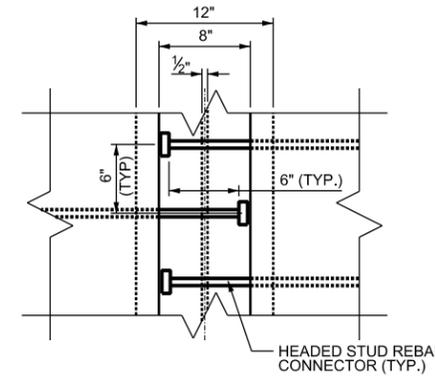
**CANTILEVER ABUTMENT SECTION**  
SCALE: 1/2" = 1'-0"



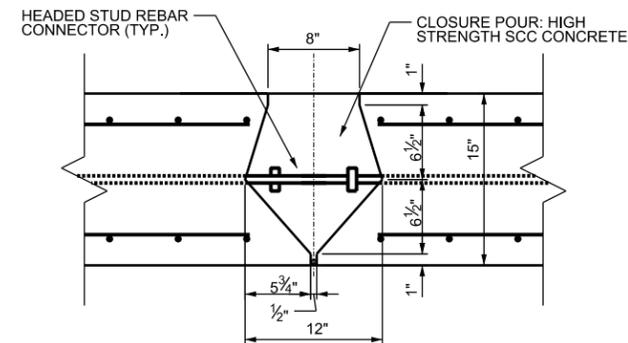
**INTEGRAL ABUTMENT SECTION**  
SCALE: 1/2" = 1'-0"



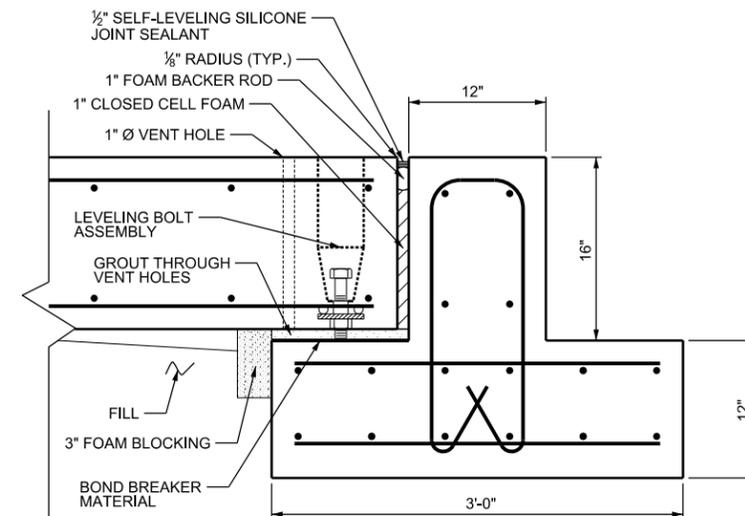
**TYPICAL APPROACH SLAB SECTION**  
SCALE: 3/16" = 1'-0"



**TRANSVERSE JOINT PLAN**  
SCALE: 3/4" = 1'-0"



**TRANSVERSE JOINT SECTION**  
SCALE: 3/4" = 1'-0"



**SLEEPER SLAB DETAIL**  
SCALE: 3/4" = 1'-0"

REVISIONS			
NO.	DATE	APPR.	REMARKS

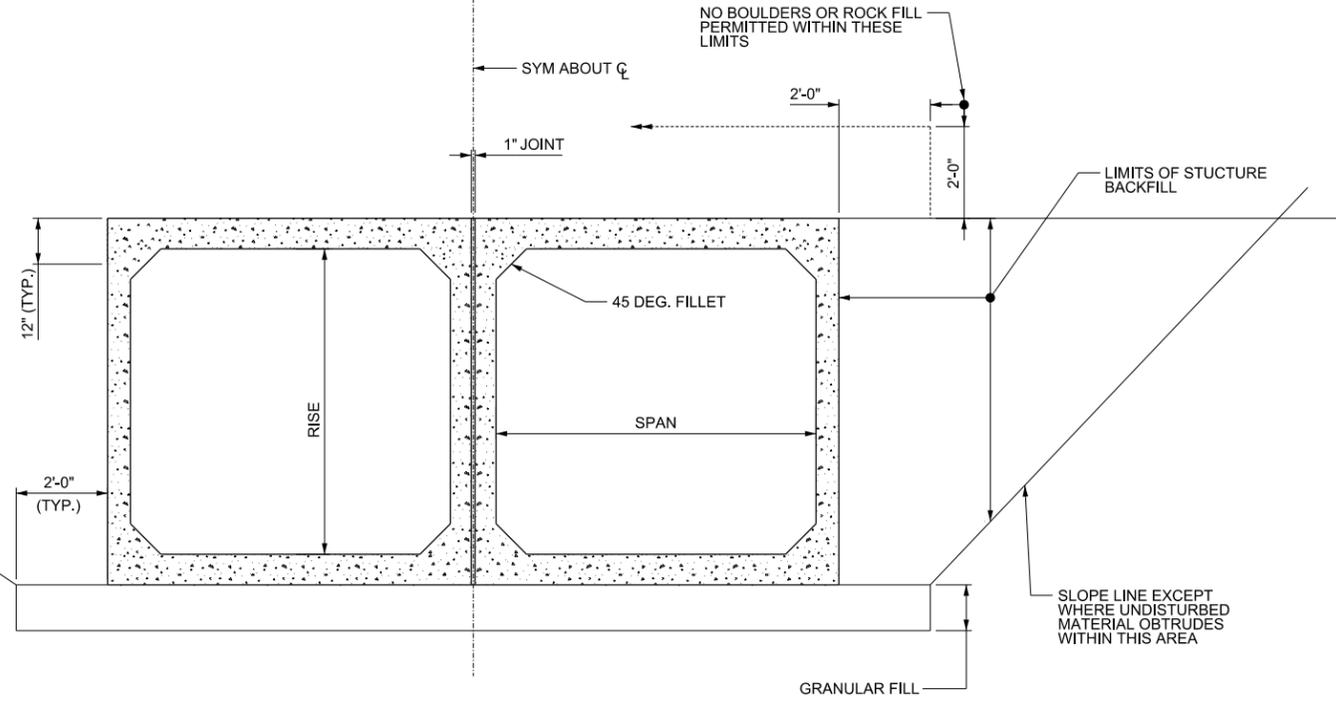
**UTAH DEPARTMENT OF TRANSPORTATION**  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
CHAIRMAN STANDARDS COMMITTEE

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DEPUTY DIRECTOR

**PRECAST APPROACH SLAB  
TYPICAL DETAILS**

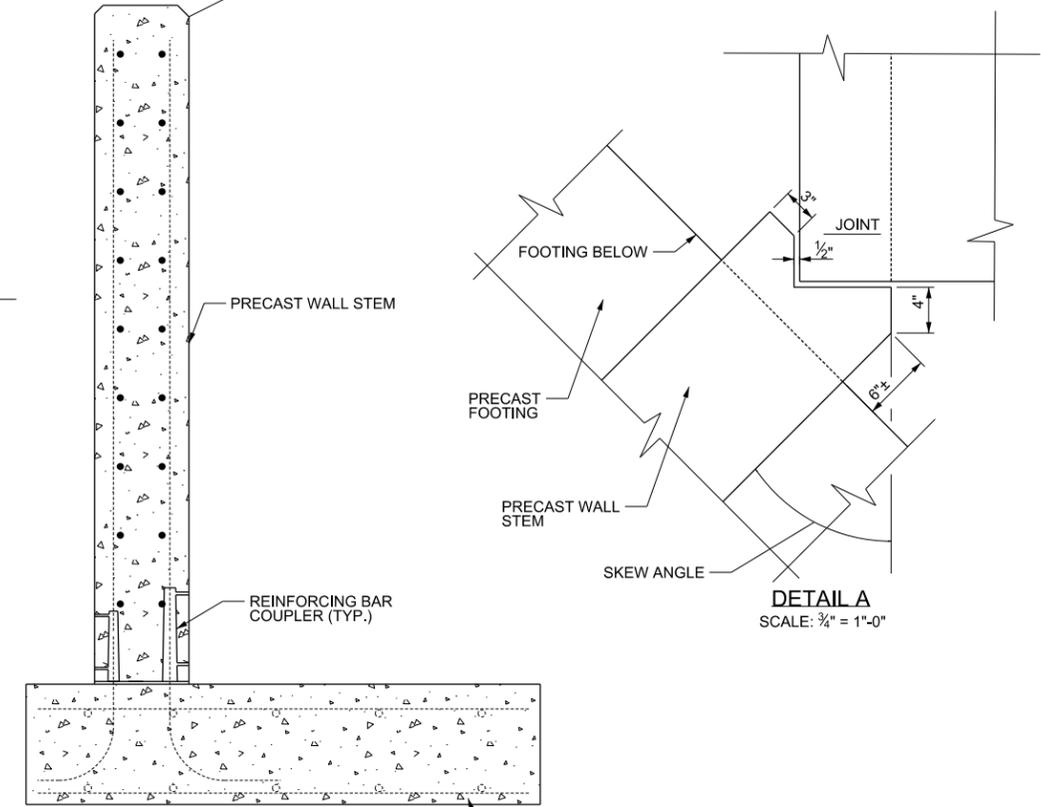
AFTER PLACING CAST-IN-PLACE NOSE SECTIONS, THIS JOINT SHALL BE FILLED BY "FLOATING" SAND INTO IT. USE ONLY ENOUGH WATER SO THAT AFTER IT HAS DRAINED AWAY, THE SAND WILL TIGHTLY FILL THE ENTIRE JOINT



PRECAST BOX CULVERT TYPICAL SECTION

SCALE: 1/4" = 1'-0"

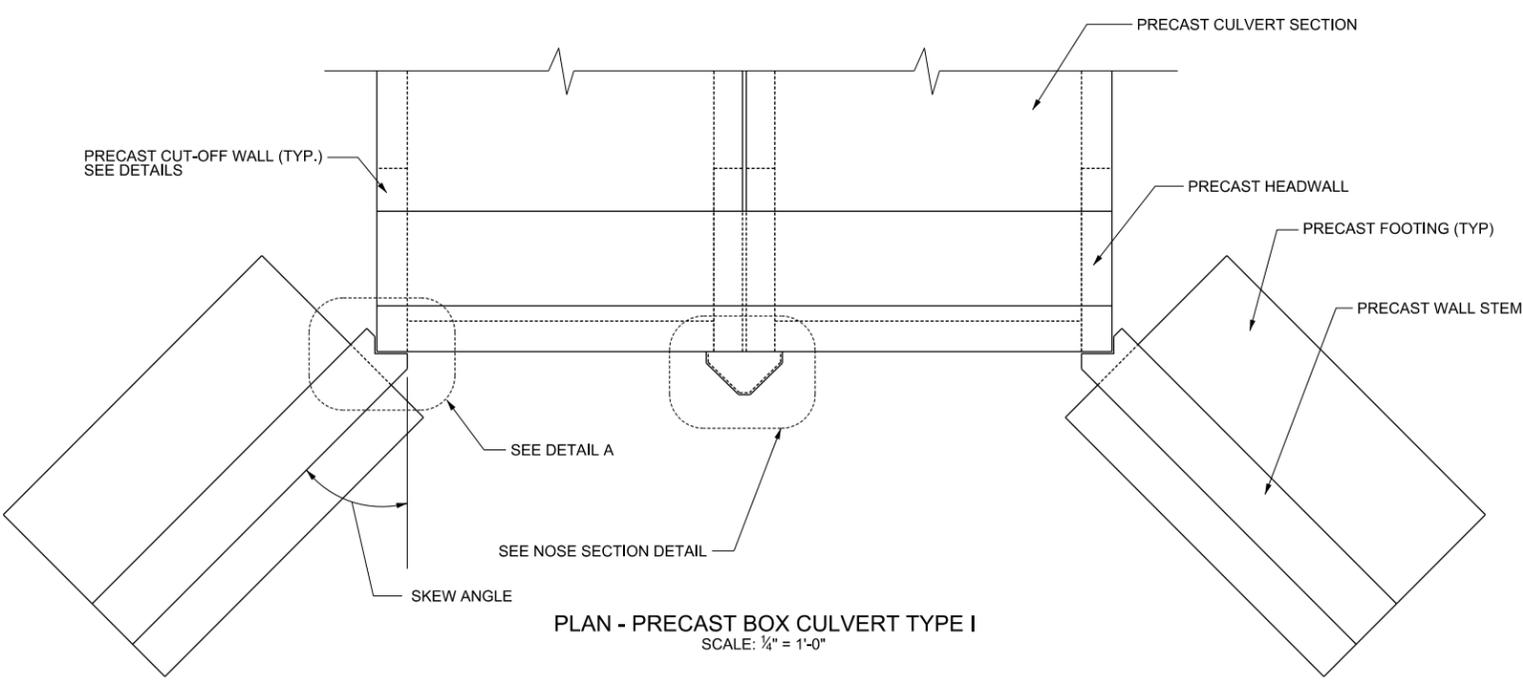
NOTE: TWIN CELL CONFIGURATION SHOWN. SINGLE CELL CONFIGURATIONS SIMILAR.



PRECAST WINGWALL SECTION

SCALE: 3/8" = 1'-0"

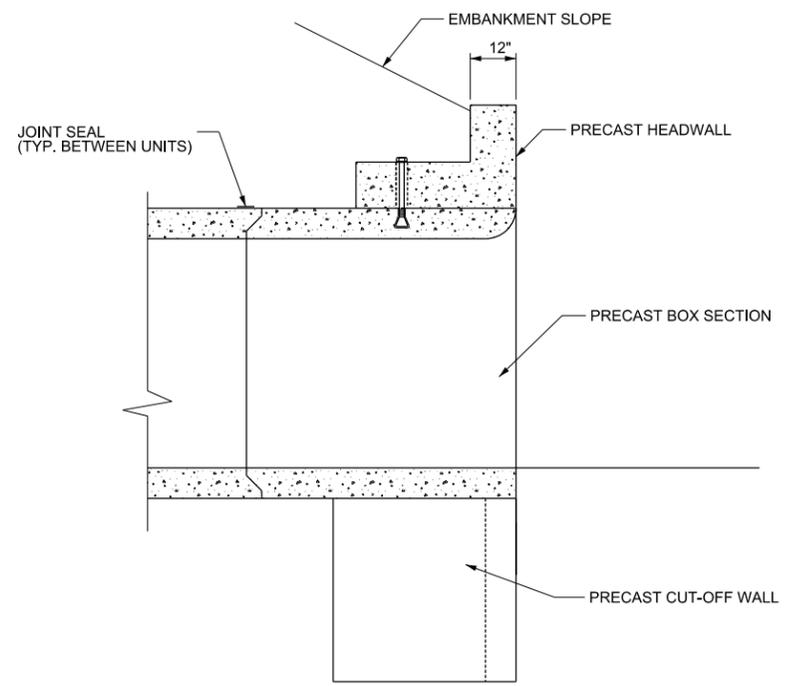
PRECAST FOOTING SEE DRAWING XX FOR DETAILS



PLAN - PRECAST BOX CULVERT TYPE I

SCALE: 1/4" = 1'-0"

NOTE: TWIN CELL CULVERT SHOWN. SINGLE CELL SIMILAR.



LONGITUDINAL SECTION PRECAST BOX CULVERT TYPE I

SCALE: 1/4" = 1'-0"

DRAFT - NOT RELEASED FOR CONSTRUCTION

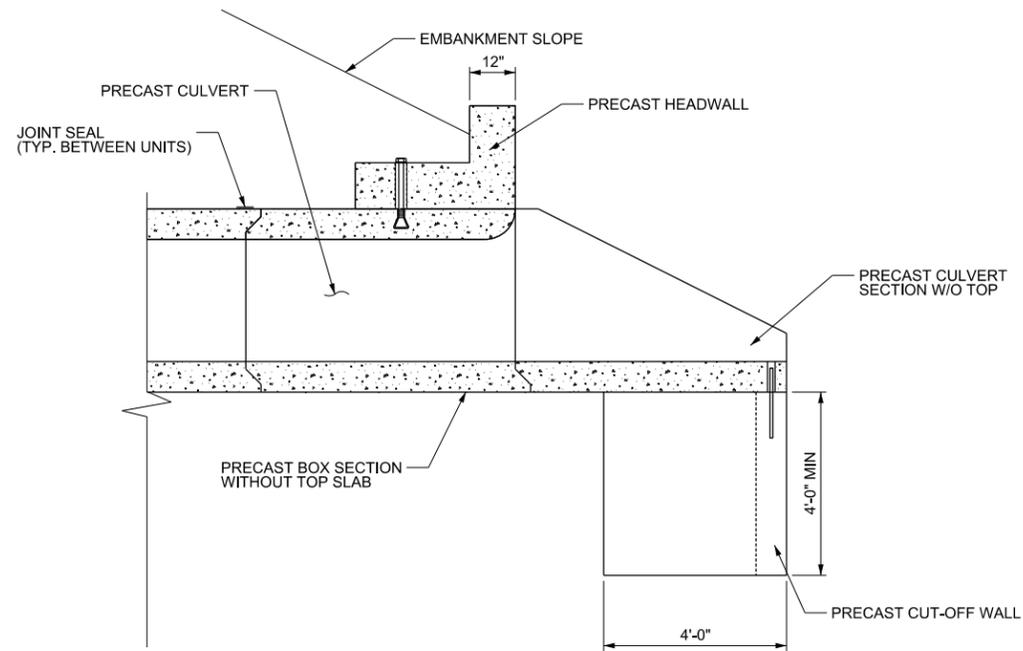
REVISIONS			
NO.	DATE	APPR.	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION SALT LAKE CITY, UTAH		DATE	DATE
		RECOMMENDED FOR APPROVAL CHAIRMAN STANDARDS COMMITTEE APPROVED	DEPUTY DIRECTOR

STANDARD PRECAST BOX CULVERT TYPE I - FLARED WINGWALLS

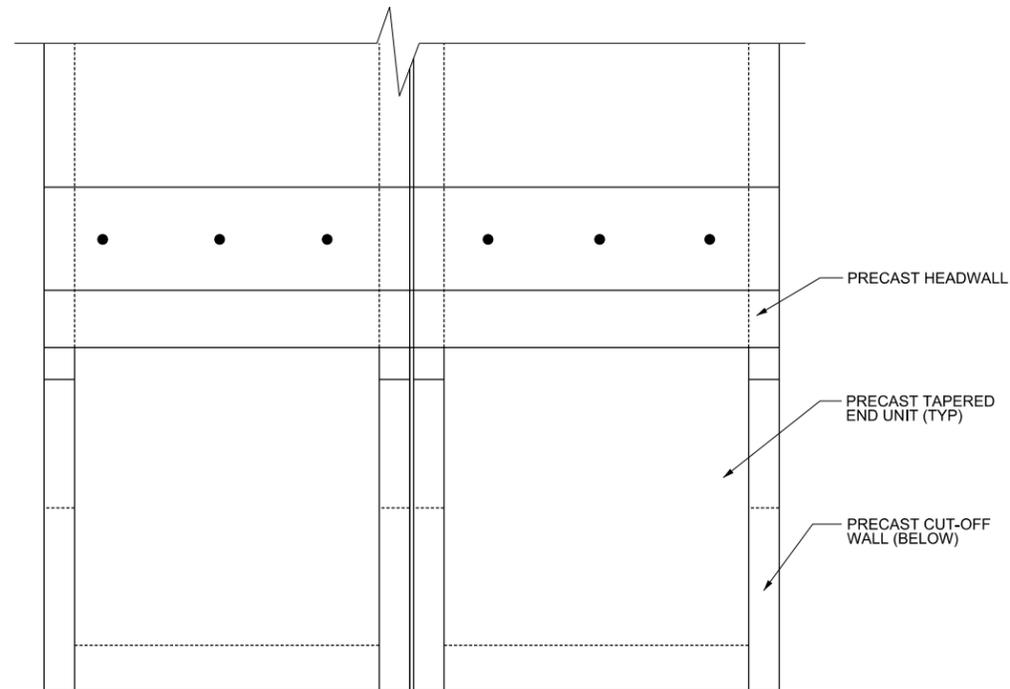
STD. DWG. NO. BC-1

\$\$\$\$\$\$  
 \$\$\$\$\$\$



LONGITUDINAL SECTION -  
PRECAST BOX CULVERT TYPE II

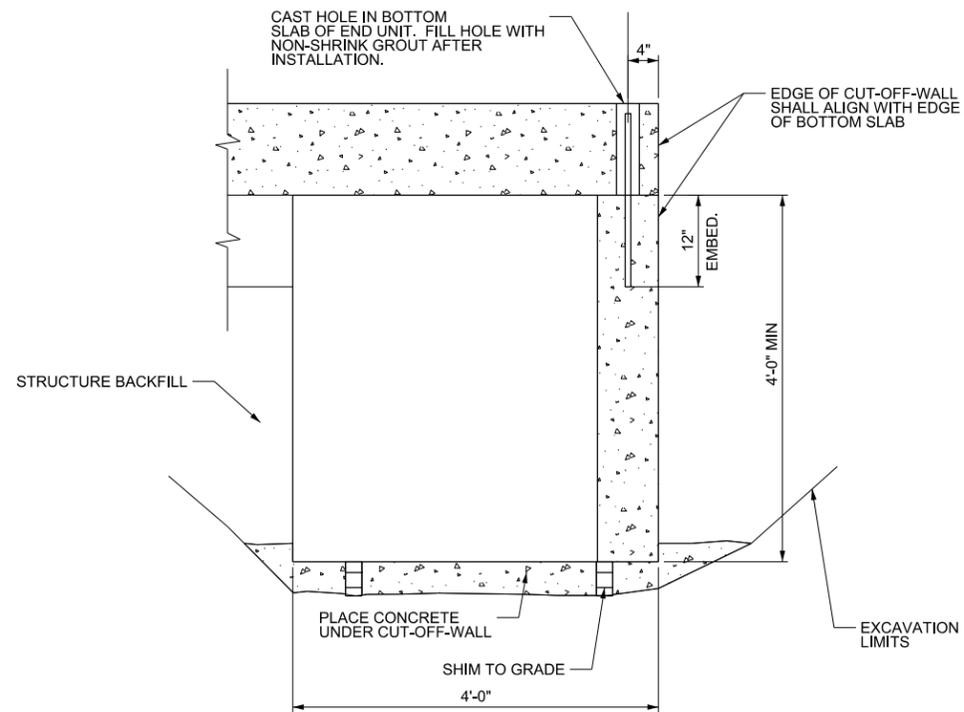
SCALE: 1/4" = 1'-0"



PLAN - PRECAST CULVERT TYPE II

SCALE: 1/4" = 1'-0"

NOTE: DOUBLE CELL CULVERT SHOWN SINGLE CELL SIMILAR



PRECAST CUT-OFF WALL DETAIL

SCALE: 1/2" = 1'-0"

REVISIONS

NO.	DATE	APPR.	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
CHAIRMAN STANDARDS COMMITTEE  
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DEPUTY DIRECTOR

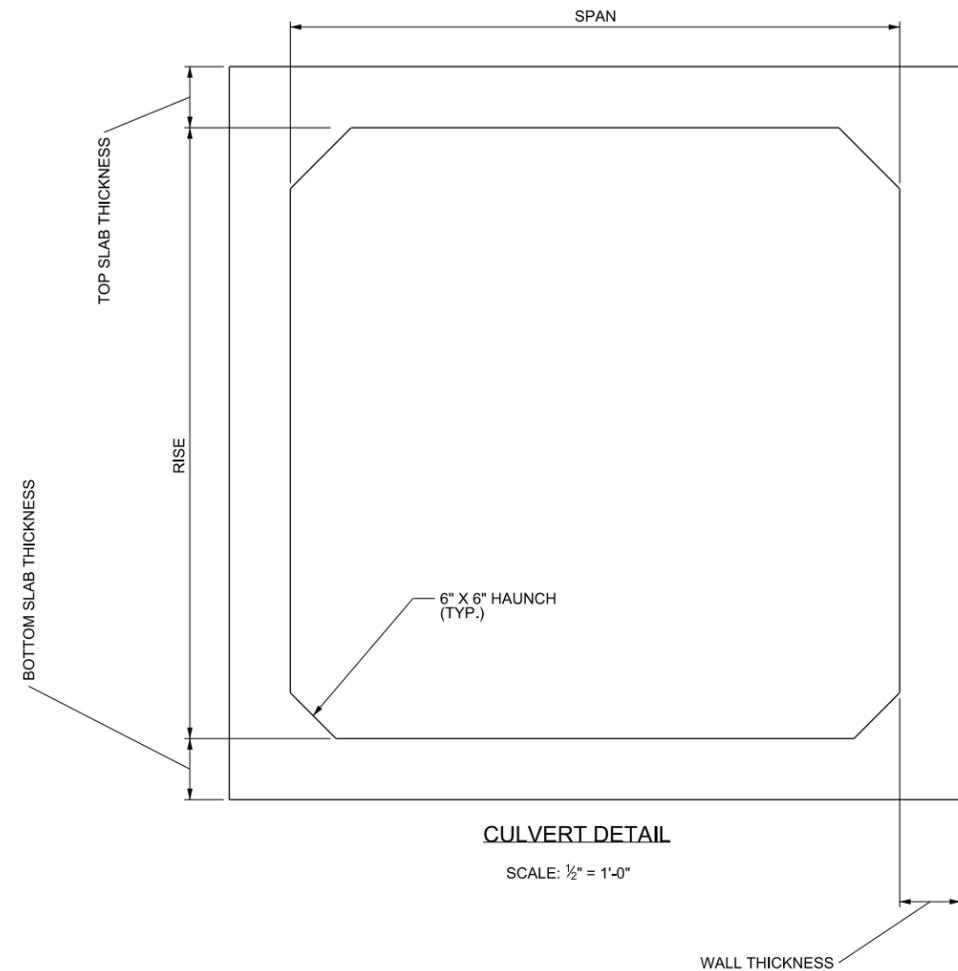
STANDARD PRECAST  
BOX CULVERT  
TYPE II-PARALLEL WINGWALLS

STD. DWG. NO.

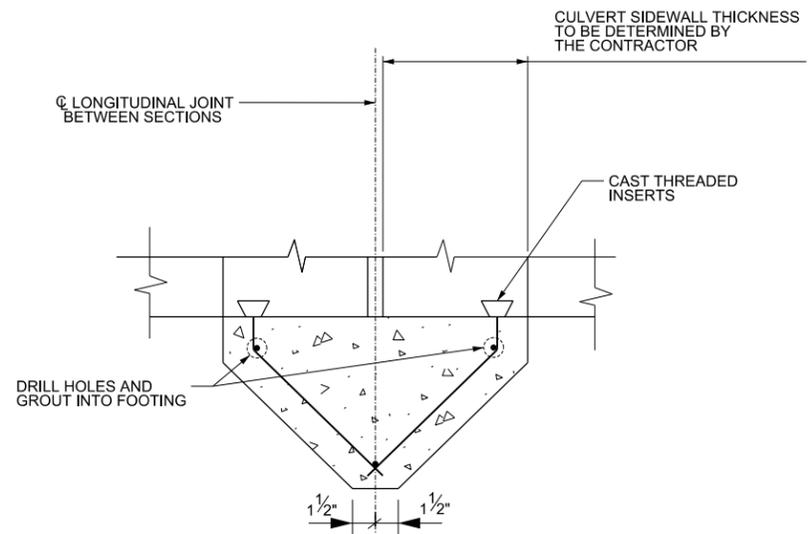
BC-2

DRAFT - NOT RELEASED FOR CONSTRUCTION

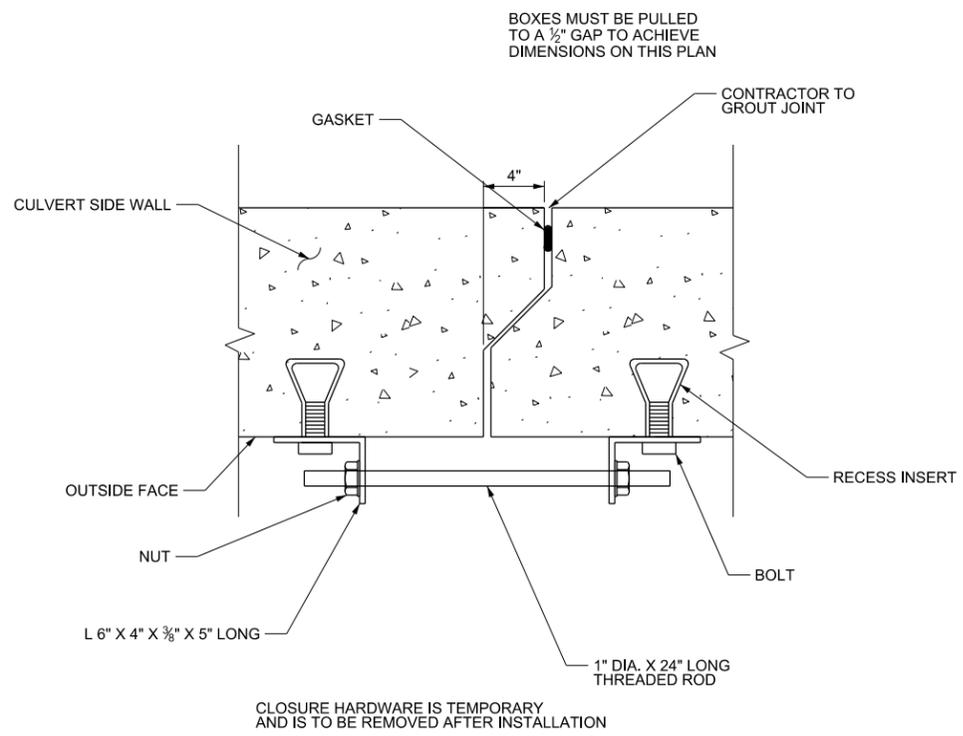
\$\$\$\$\$



**CULVERT DETAIL**  
SCALE: 1/2" = 1'-0"

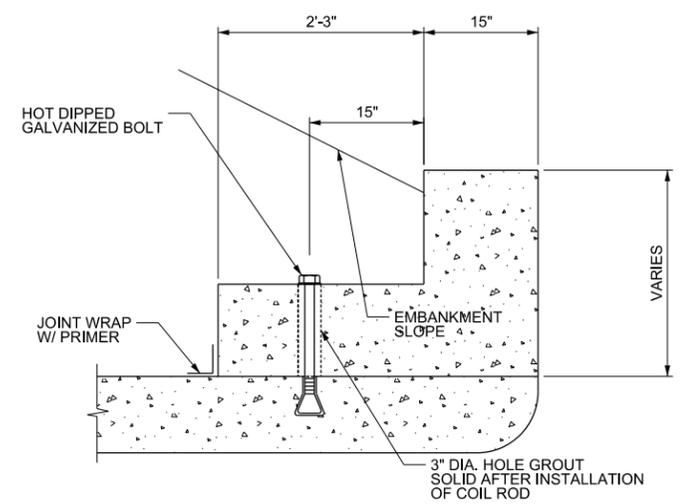


**PRECAST BOX CULVERT  
CAST-IN-PLACE NOSE SECTION**  
SCALE: 1" = 1'-0"

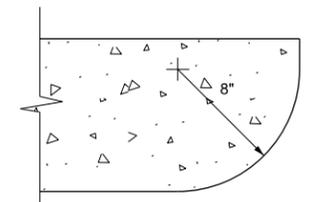


CLOSURE HARDWARE IS TEMPORARY AND IS TO BE REMOVED AFTER INSTALLATION

**CLOSURE HARDWARE DETAIL**  
SCALE: 1" = 1'-0"



**HEADWALL DETAIL**  
SCALE: 1/2" = 1'-0"



**TOP SLAB INLET EDGE DETAIL**  
SCALE: 1/2" = 1'-0"

NOTE: FOR TOP SLAB LESS THAN 8", USE 6" RADIUS

**DRAFT - NOT RELEASED FOR CONSTRUCTION**

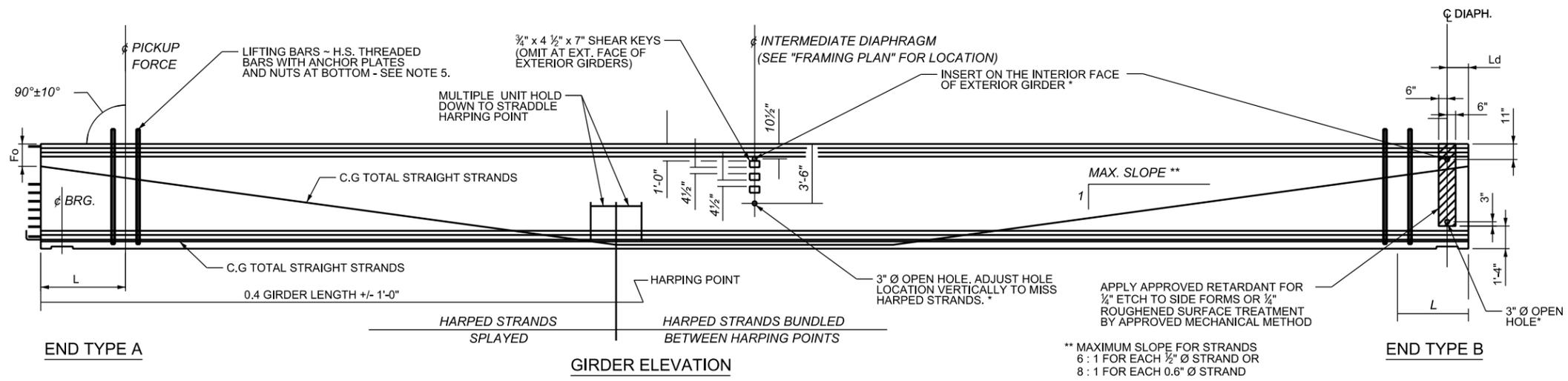
REVISIONS			
NO.	DATE	APPR.	REMARKS

<b>UTAH DEPARTMENT OF TRANSPORTATION</b>	
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION	
SALT LAKE CITY, UTAH	
RECOMMENDED FOR APPROVAL	DATE
CHAIRMAN STANDARDS COMMITTEE	DATE
APPROVED	DATE
DEPUTY DIRECTOR	DATE

**STANDARD PRECAST  
BOX CULVERT  
TYPICAL DETAILS**

STD. DWG. NO.  
**BC-3**

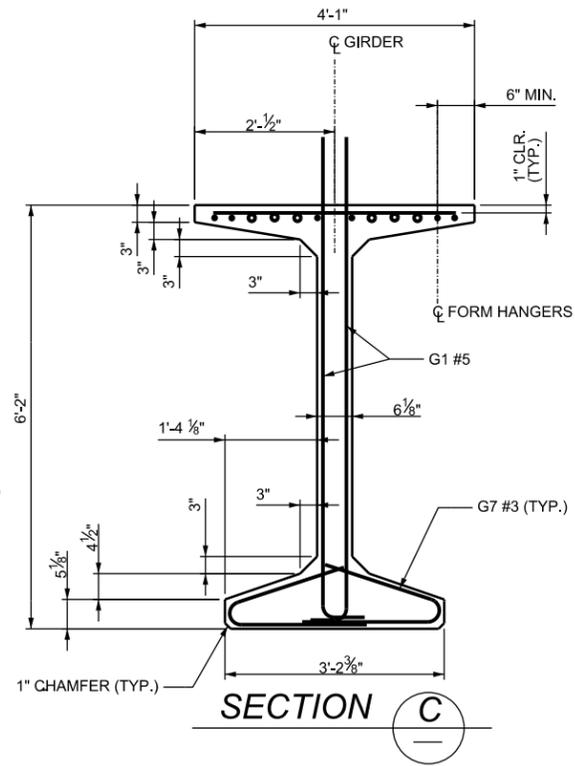
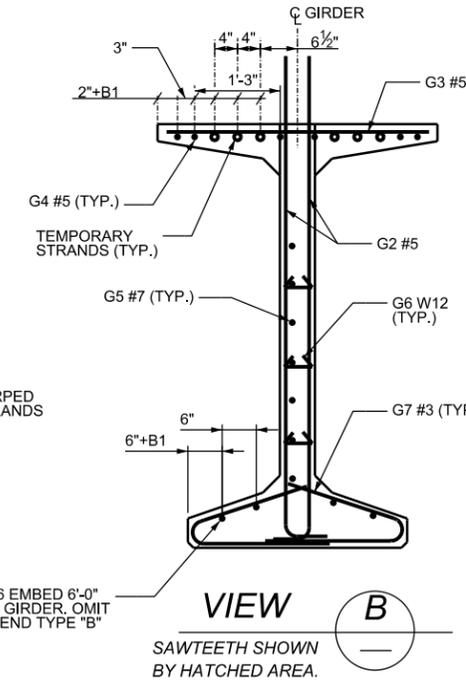
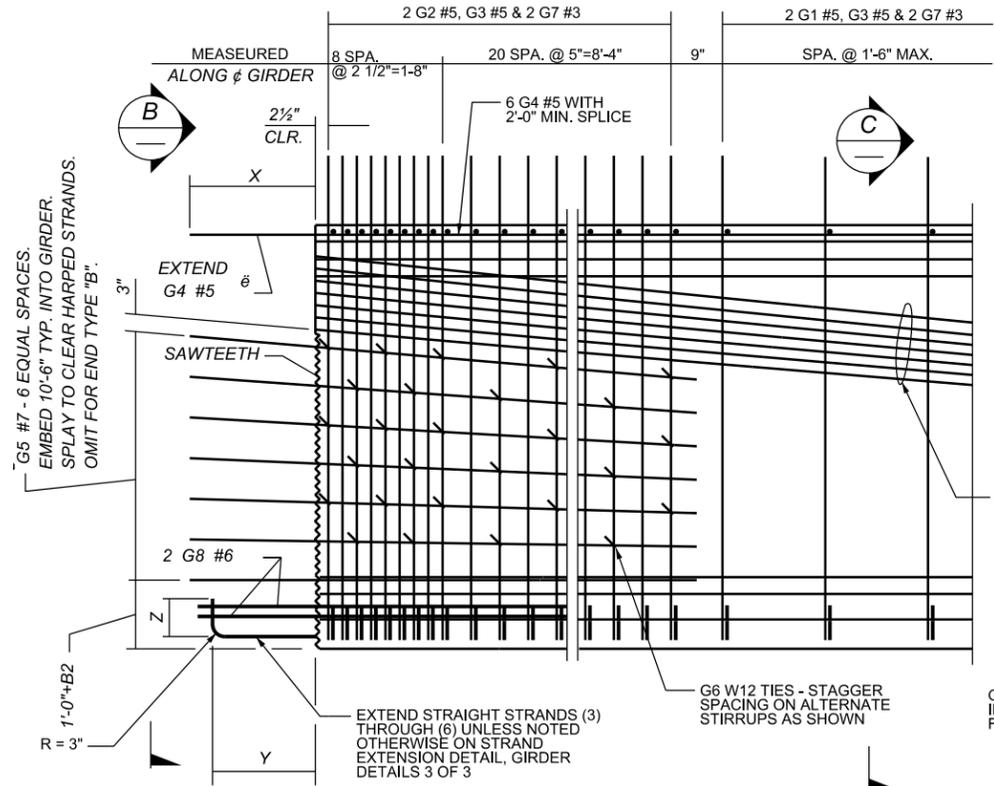
55511055



1. PLAN LENGTH SHALL BE INCREASED AS NECESSARY TO COMPENSATE FOR SHORTENING DUE TO PRESTRESS AND SHRINKAGE.
2. ALL PRETENSIONED AND TEMPORARY STRANDS SHALL BE [ 1/2" Ø OR 0.6" Ø ] LOW RELAXATION STRANDS (AASHTO M203 GRADE 270.)

\* OMIT HOLES AND PLACE INSERTS ON THE INTERIOR FACE OF EXTERIOR GIRDERS. PLACE HOLES AND INSERTS PARALLEL TO SKEW. INSERTS SHALL BE 1" Ø BURKE HI-TENSILE, LANCASTER MALLEABLE, DAYTON-SUPERIOR F-62 FLARED THIN SLAB (1" x 4Ø") FERRULE INSERT OR APPROVED EQUAL. (TYP.)

\*\* MAXIMUM SLOPE FOR STRANDS  
 6 : 1 FOR EACH 1/2" Ø STRAND OR  
 8 : 1 FOR EACH 0.6" Ø STRAND



**TYPICAL END ELEVATION**

END TYPE C SHOWN, OTHER END TYPES SIMILAR.

δ FIELD BENDING REQUIRED TO OBTAIN 1 1/2" CONCRETE COVER AT PAVEMENT SEAT.

NO.	DATE	APPR.	REMARKS

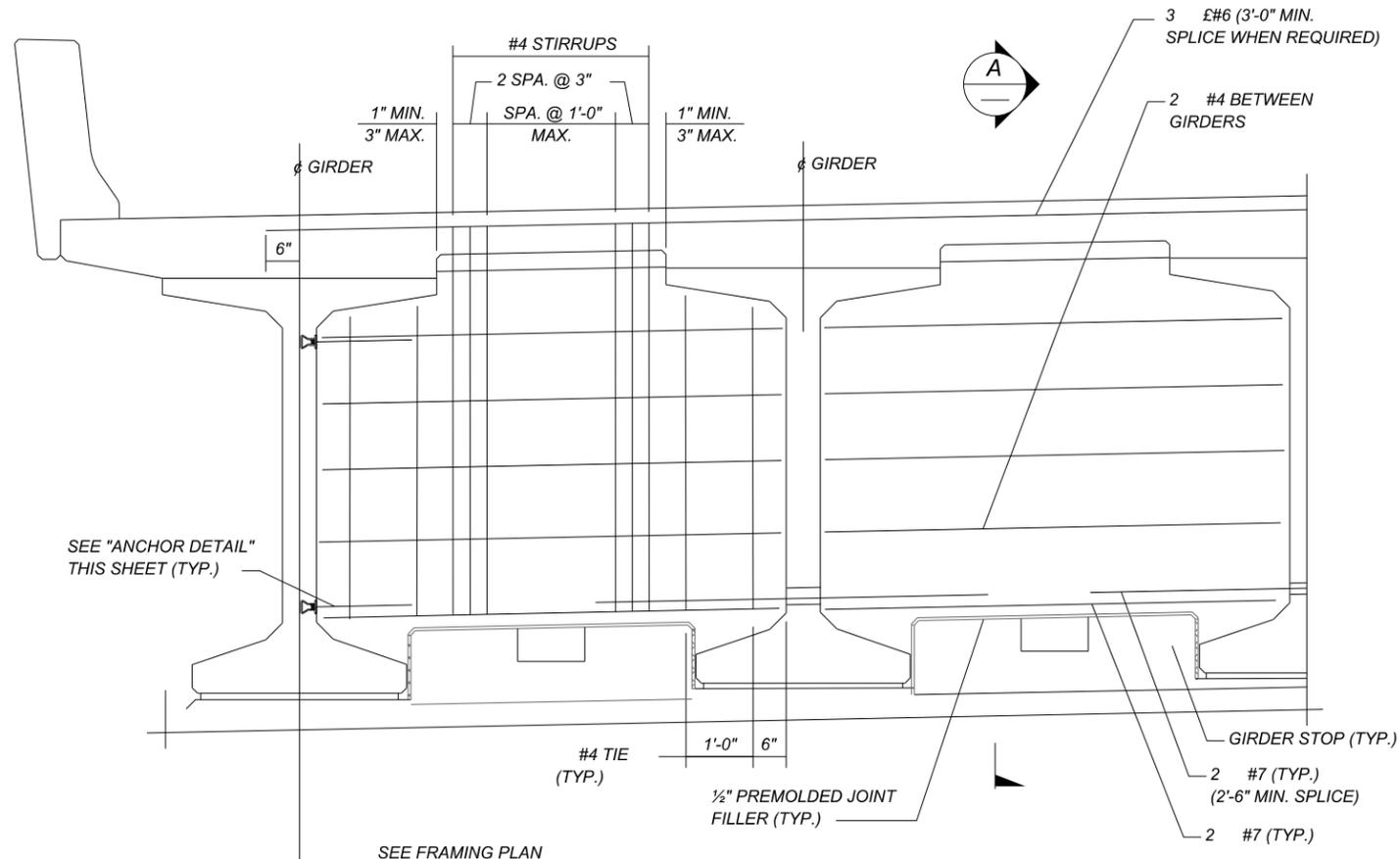
**UTAH DEPARTMENT OF TRANSPORTATION**  
 STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
 SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL \_\_\_\_\_  
 CHAIRMAN STANDARDS COMMITTEE  
 APPROVED \_\_\_\_\_  
 DEPUTY DIRECTOR \_\_\_\_\_

DATE \_\_\_\_\_  
 DATE \_\_\_\_\_

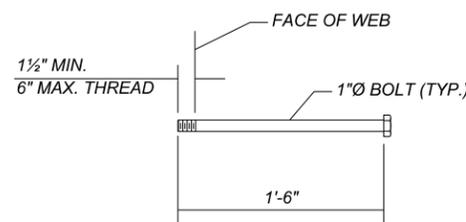
STD. DWG. NO.  
**G - 1**



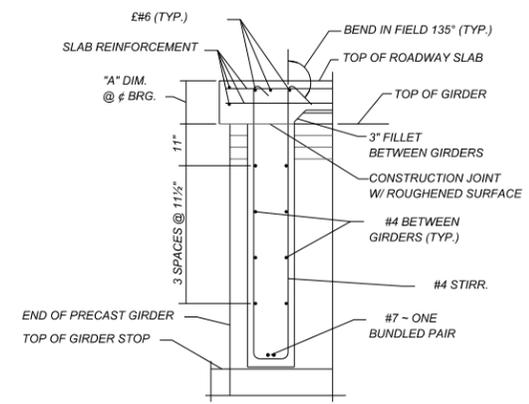


**ELEVATION  
END DIAPHRAGM**

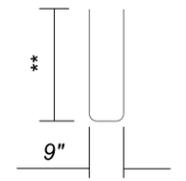
DIMENSIONS ARE ALONG DIAPHRAGM



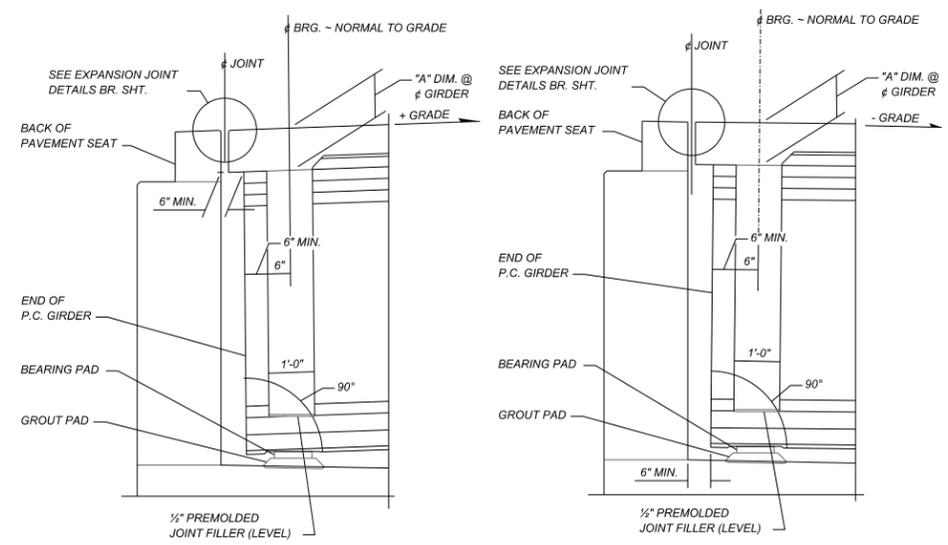
**ANCHOR DETAIL**  
ASTM A-307



**SECTION A**



\*\* DISTANCE FROM TOP OF GIRDER TO BOTTOM OF DIAPHRAGM + "A"



**ROADWAY EXPANSION JOINT AT END PIERS**

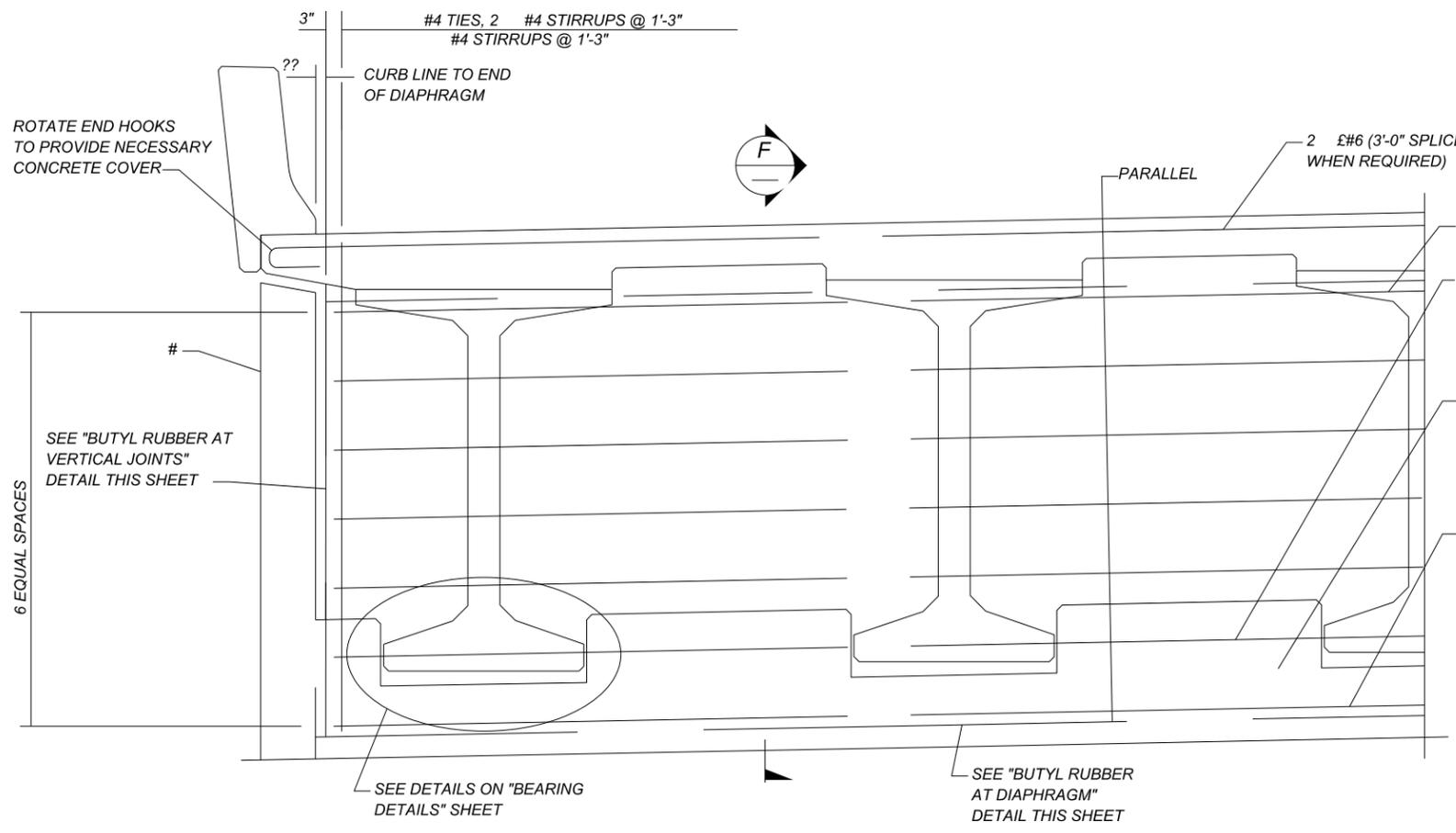
LONGITUDINAL DIMENSIONS ARE NORMAL TO SKEW.  
GIRDER STOP NOT SHOWN FOR CLARITY.

NO.	DATE	APPR.	REMARKS

<b>UTAH DEPARTMENT OF TRANSPORTATION</b> STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION SALT LAKE CITY, UTAH	RECOMMENDED FOR APPROVAL	DATE
	CHAIRMAN STANDARDS COMMITTEE APPROVED	DATE
	DEPUTY DIRECTOR	DATE


STD. DWG. NO.

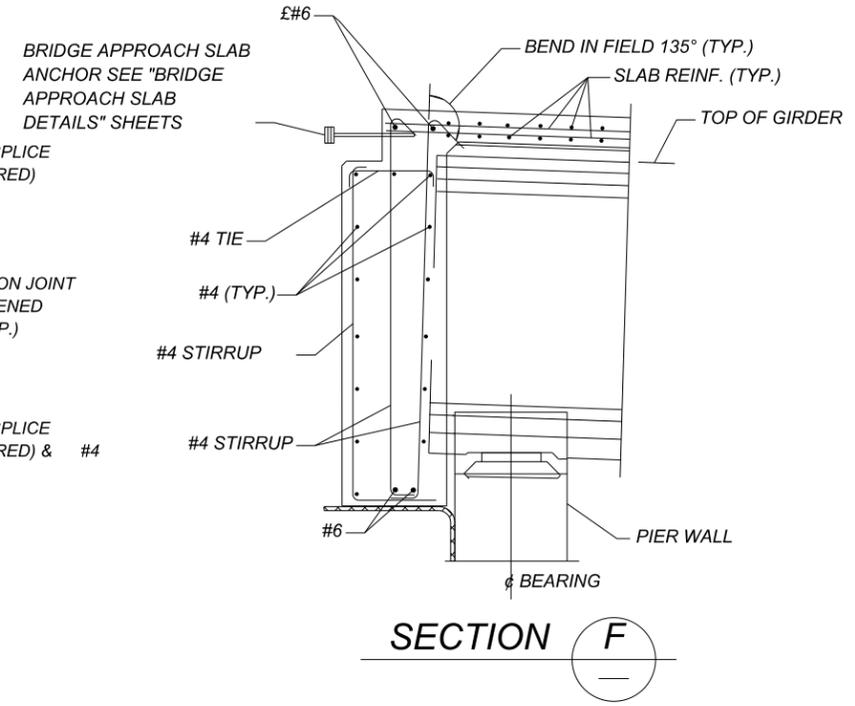
**G - 3**



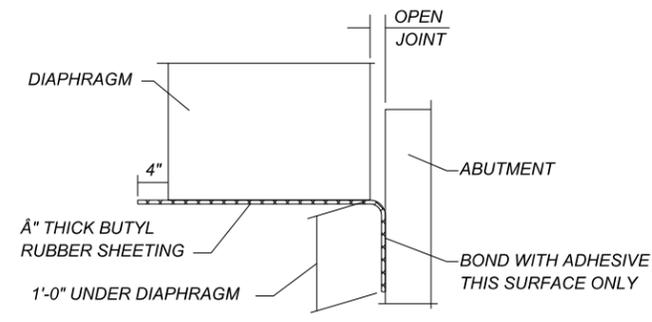
**ELEVATION  
END DIAPHRAGM**

DIMENSIONS ARE ALONG DIAPHRAGM

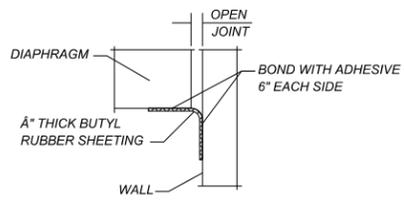
6 EQUAL SPACES



**SECTION F**



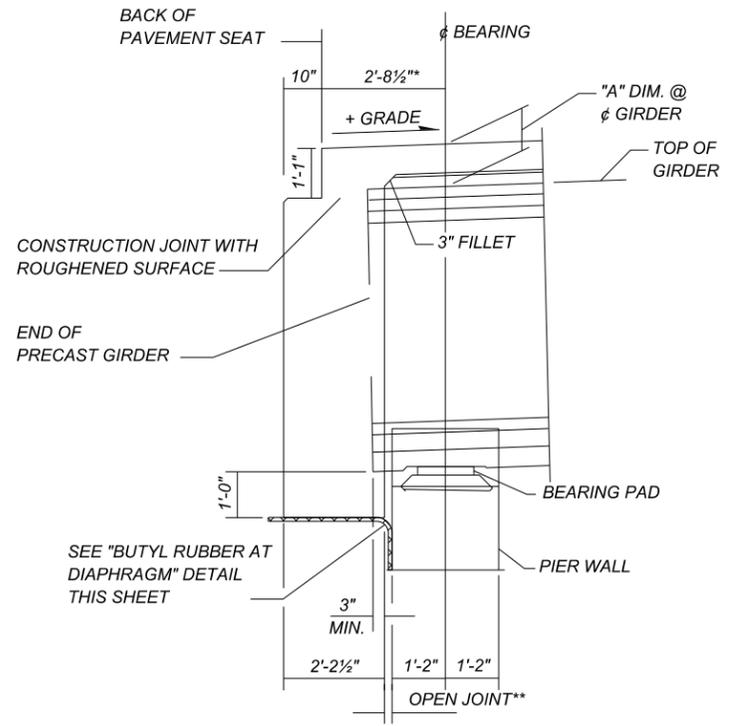
**ELEVATION  
BUTYL RUBBER  
AT DIAPHRAGM**



**PLAN  
BUTYL RUBBER  
AT VERTICAL JOINTS**

Bridge length	Open Joint
L < 200'	** = 1.5"
200' < L < 300'	** = 2.0"
300' < L < 400'	** = 2.5"
L > 400'	Special design

\* Revise based on size of Open Joint



**END DIAPHRAGM GEOMETRY**

SEE "GIRDER DETAILS" SHEET FOR DIMENSION "A".  
ALL LONGITUDINAL DIMENSIONS ARE NORMAL TO SKEW.

NO.	DATE	APPR.	REMARKS

<b>UTAH DEPARTMENT OF TRANSPORTATION</b> STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION SALT LAKE CITY, UTAH	RECOMMENDED FOR APPROVAL	DATE
	CHAIRMAN STANDARDS COMMITTEE APPROVED	DATE
	DEPUTY DIRECTOR	DATE

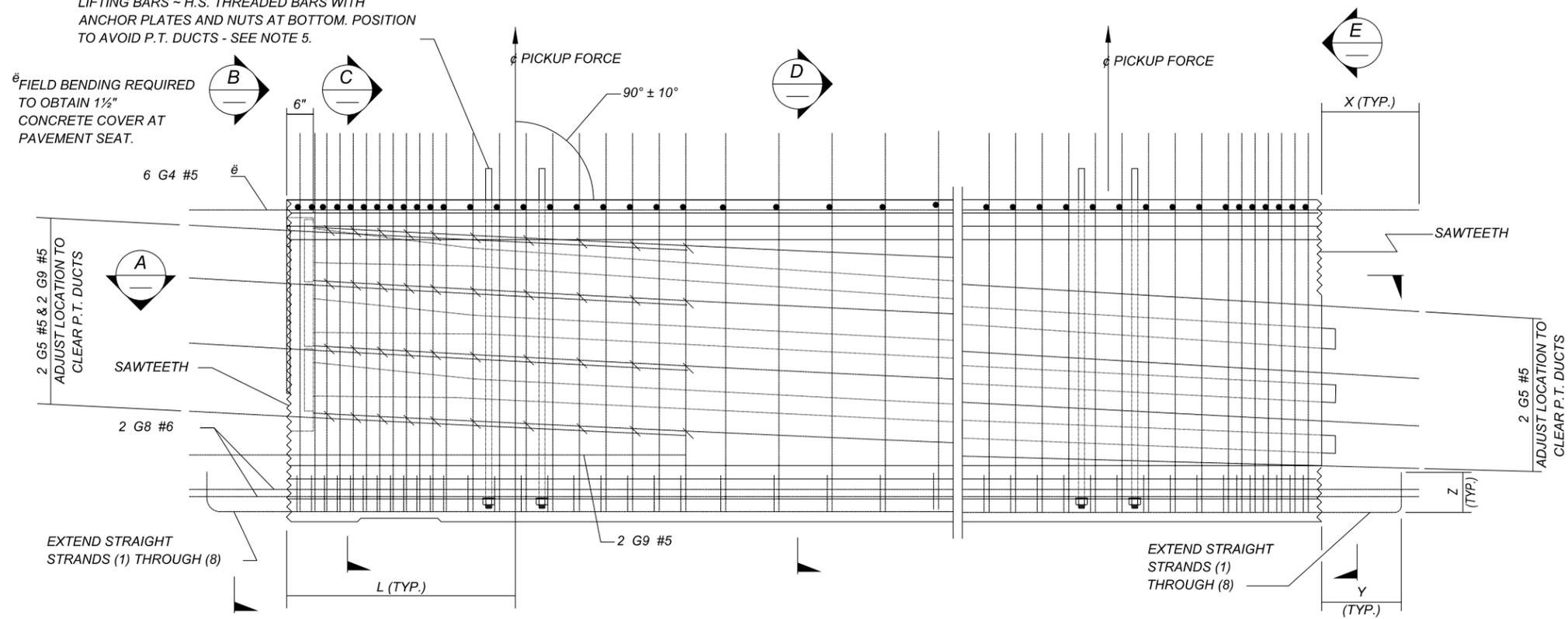
--

STD. DWG. NO.

**G - 4**

LIFTING BARS ~ H.S. THREADED BARS WITH ANCHOR PLATES AND NUTS AT BOTTOM. POSITION TO AVOID P.T. DUCTS - SEE NOTE 5.

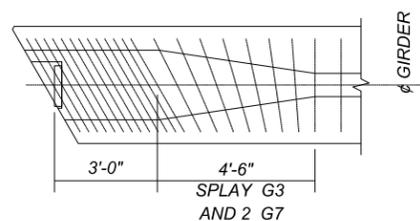
FIELD BENDING REQUIRED TO OBTAIN 1 1/2" CONCRETE COVER AT PAVEMENT SEAT.



**TYPICAL ELEVATION AT END SEGMENT**

END TYPE A SHOWN, OTHER END TYPES SIMILAR

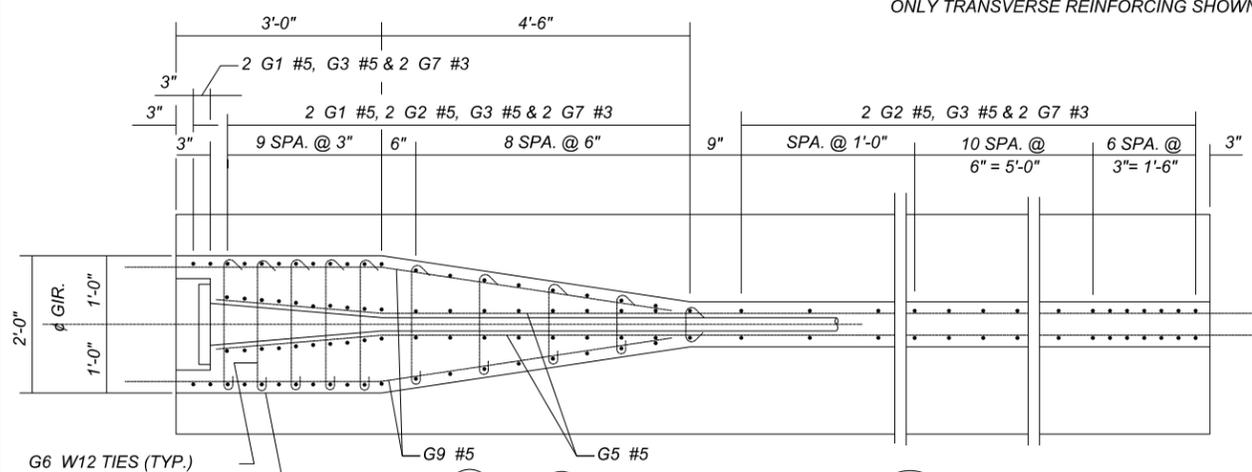
**TYPICAL END ELEVATION AT CLOSURE**



**TRANSVERSE REINFORCING AT SKEWED ENDS**

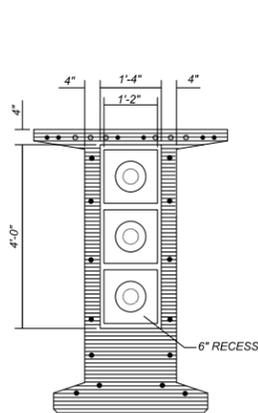
ONLY TRANSVERSE REINFORCING SHOWN

Stirrup spacing shall be determined by the designer.

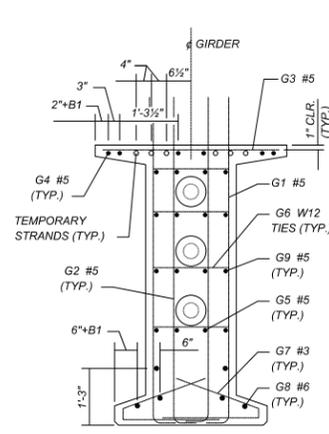


**SECTION A**

End block may be eliminated if PT anchorages are placed in the cast-in-place diaphragm.

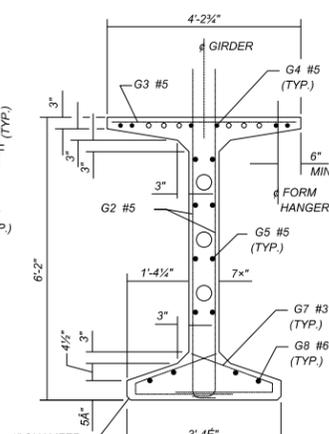


**VIEW B**

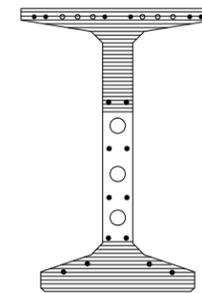


**SECTION C**

FOR "B1" SEE GIRDER DETAILS 3 OF 5



**SECTION D**

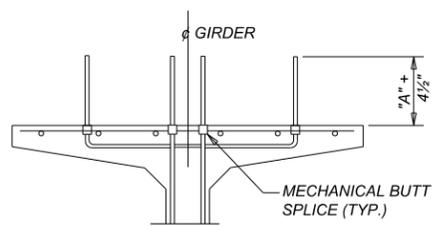


NO.	DATE	APPR.	REMARKS

**UTAH DEPARTMENT OF TRANSPORTATION**  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

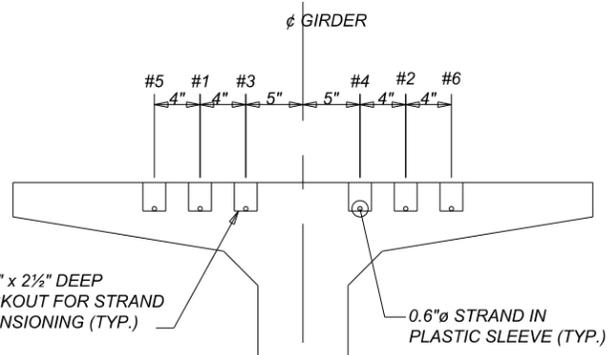
RECOMMENDED FOR APPROVAL  
CHAIRMAN STANDARDS COMMITTEE  
DEPUTY DIRECTOR



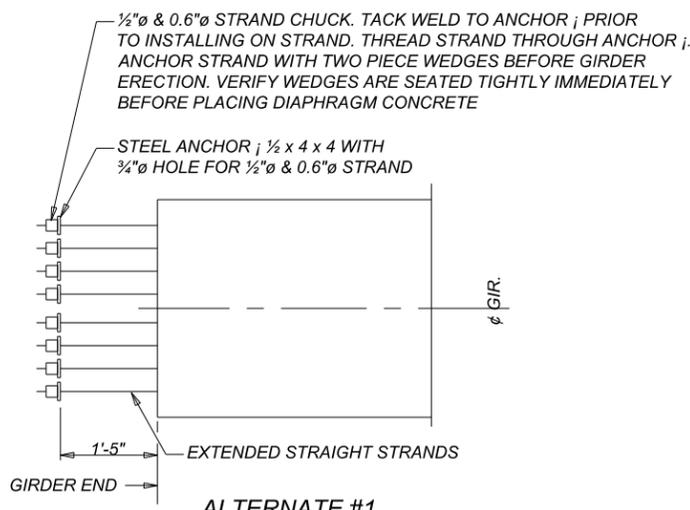


**ALTERNATE STIRRUP DETAIL**

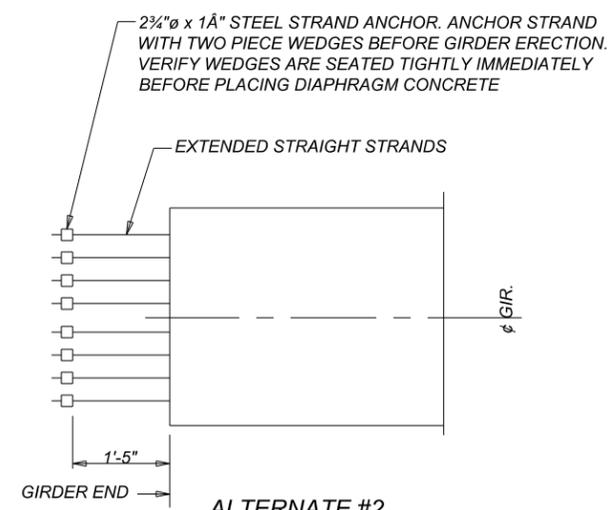
2" x 2" x 2 1/2" DEEP BLOCKOUT FOR STRAND DETENSIONING (TYP.)



**SECTION A**

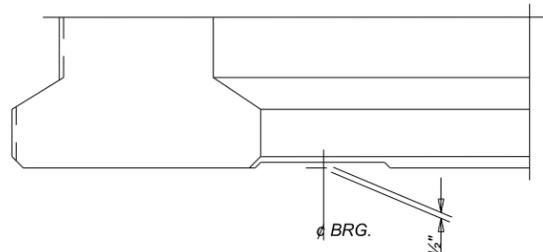


**ALTERNATE #1**

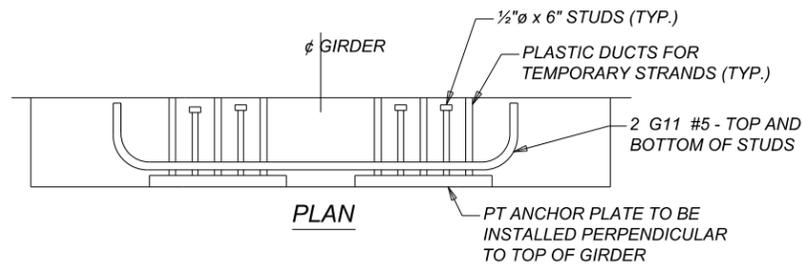


**ALTERNATE #2**

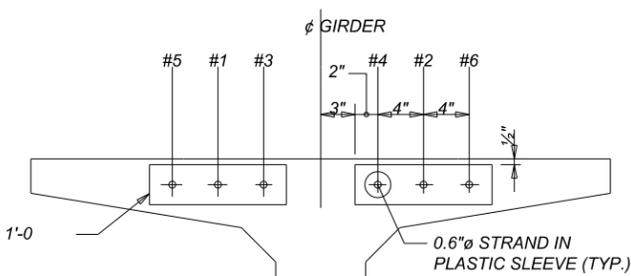
**STRAND EXTENSION DETAIL**



**ELEVATION**



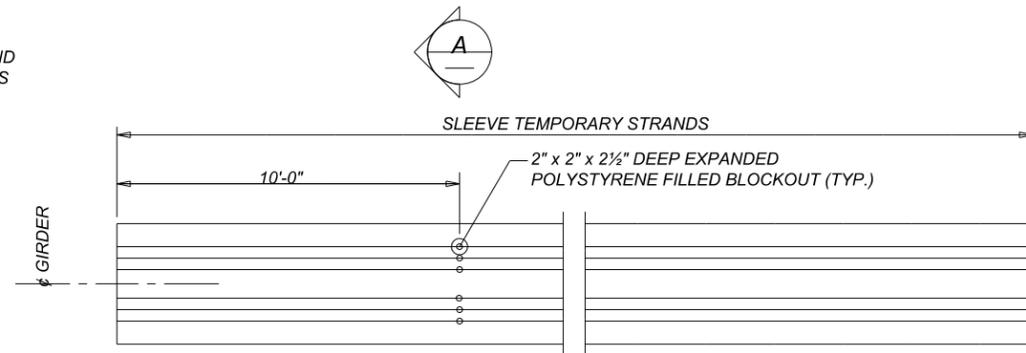
**PLAN**



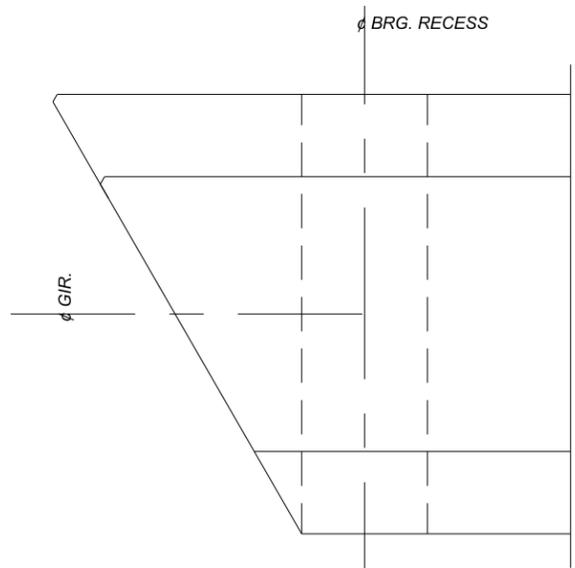
**ELEVATION**

**TEMPORARY STRAND PATTERN AT TOP FLANGE GIRDER END**

ADJUST G4 #5 BARS TO CLEAR THE STEEL PLATE



**PLAN VIEW OF TEMPORARY STRANDS**



**PLAN**

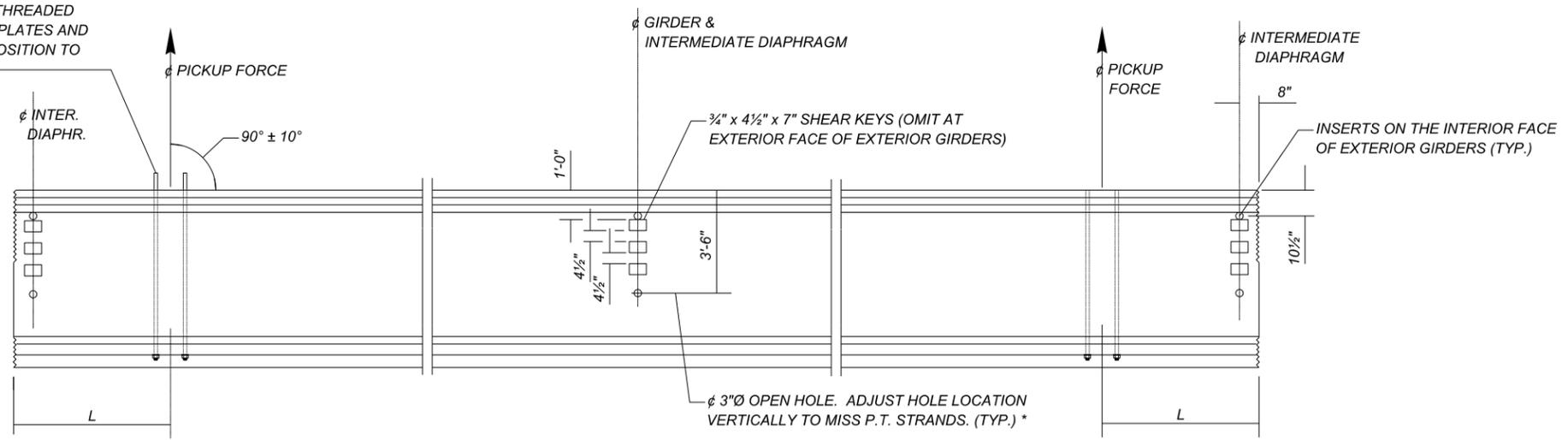
**BOTTOM FLANGE**

NO.	DATE	APPR.	REMARKS

**UTAH DEPARTMENT OF TRANSPORTATION**  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

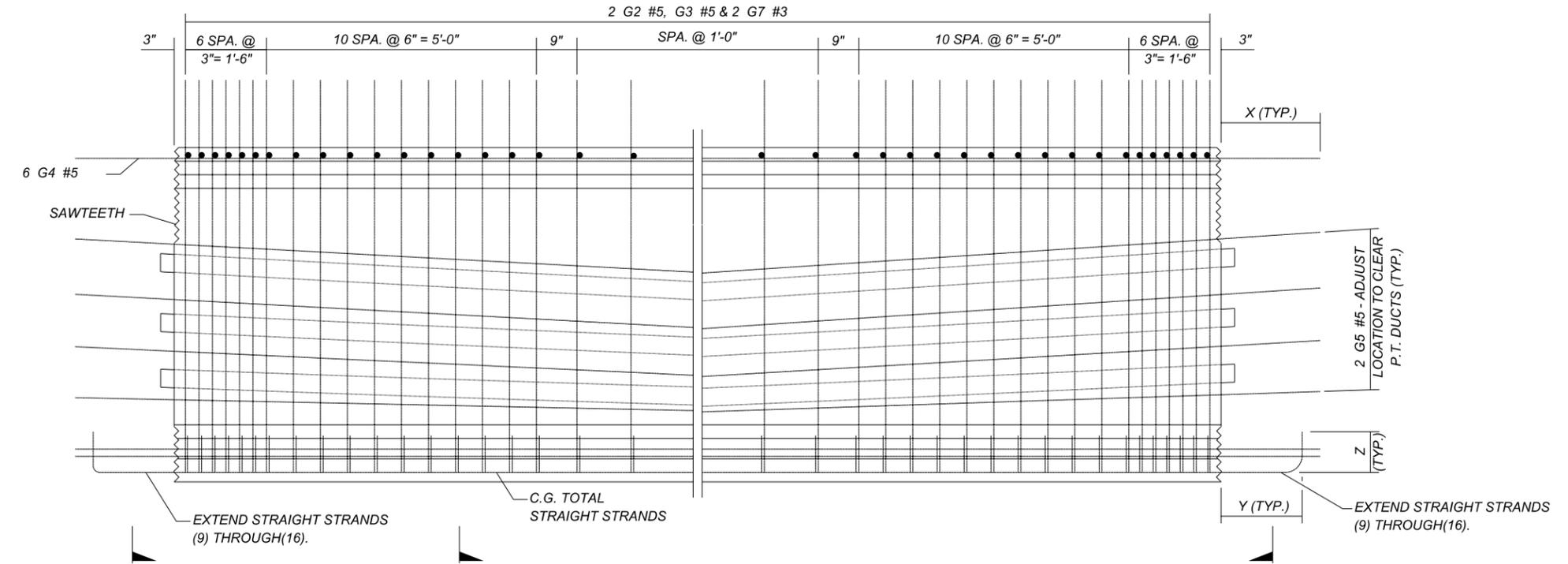
RECOMMENDED FOR APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_  
CHAIRMAN STANDARDS COMMITTEE  
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DEPUTY DIRECTOR

LIFTING BARS ~ H.S. THREADED BARS WITH ANCHOR PLATES AND NUTS AT BOTTOM. POSITION TO AVOID P.T. DUCTS.



**GIRDER ELEVATION  
MID-SEGMENT**

\*OMIT HOLES AND PLACE INSERTS ON THE INTERIOR FACE OF EXTERIOR GIRDERS. PLACE HOLES AND INSERTS PARALLEL TO SKEW. INSERTS SHALL BE 1"Ø BURKE HI-TENSILE, LANCASTER MALLEABLE, DAYTON-SUPERIOR F-62 FLARED THIN SLAB (1" x 4Ø") FERRULE INSERT OR APPROVED EQUAL. (TYP.)



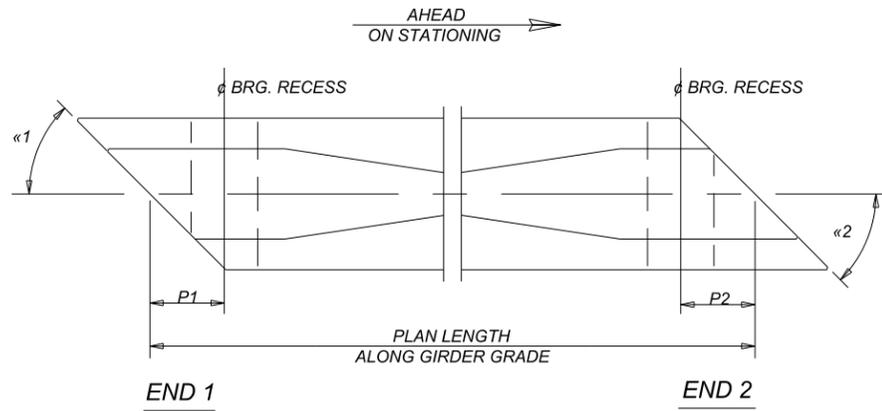
**ELEVATION  
MID-SEGMENT REINFORCING**

REVISIONS			
NO.	DATE	APPR.	REMARKS

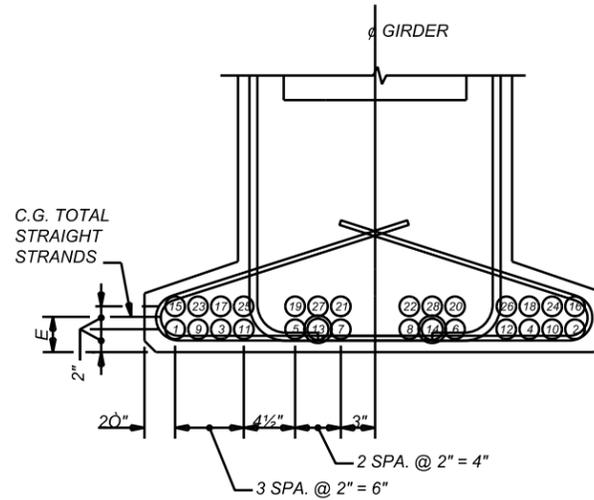
<b>UTAH DEPARTMENT OF TRANSPORTATION</b> STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION SALT LAKE CITY, UTAH		DATE
		DATE
RECOMMENDED FOR APPROVAL		DATE
CHAIRMAN STANDARDS COMMITTEE		DATE
APPROVED		DATE
DEPUTY DIRECTOR		DATE

UTAH DEPARTMENT OF TRANSPORTATION  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

STD. DWG. NO.  
**G - 8**



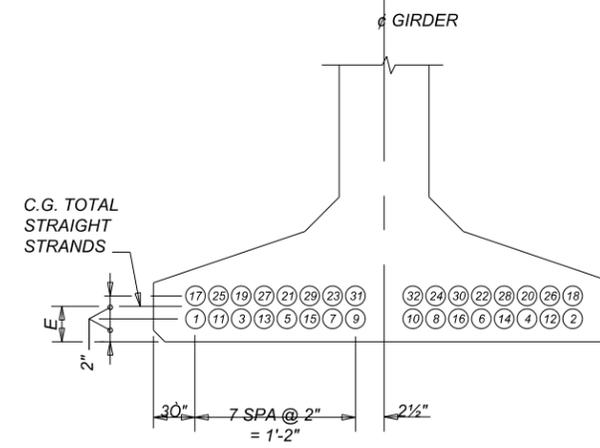
**GIRDER PLAN**



**STRAND PATTERN  
PRECAST END SEGMENTS**

STRAIGHT STRAND LOCATION SEQUENCE SHALL BE AS SHOWN: (1), (2), (3), ETC.

○ - INDICATES DEBONDED STRAND.



**STRAND PATTERN  
PRECAST MID-SEGMENTS**

STRAIGHT STRAND LOCATION SEQUENCE SHALL BE AS SHOWN: (1), (2), (3), ETC.

○ - INDICATES DEBONDED STRAND.

REVISIONS

NO.	DATE	APPR.	REMARKS

**UTAH DEPARTMENT OF TRANSPORTATION**  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL

CHAIRMAN STANDARDS COMMITTEE  
APPROVED

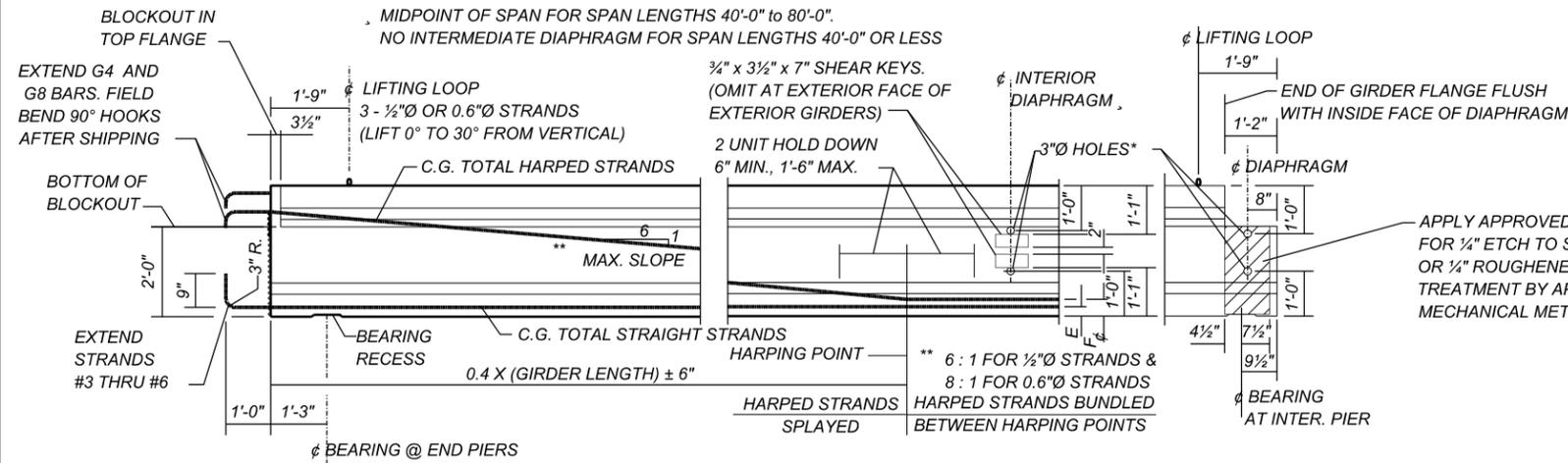
DEPUTY DIRECTOR

DATE

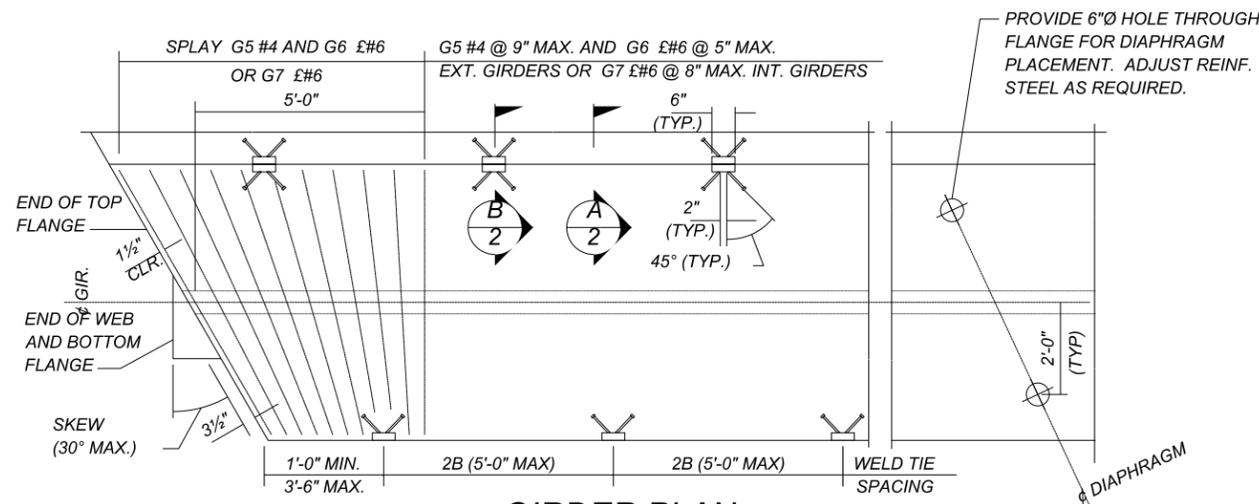
DATE

STD. DWG. NO.

**G - 9**

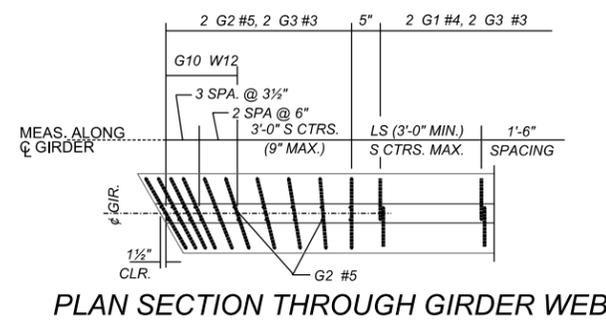


**GIRDER ELEVATION**

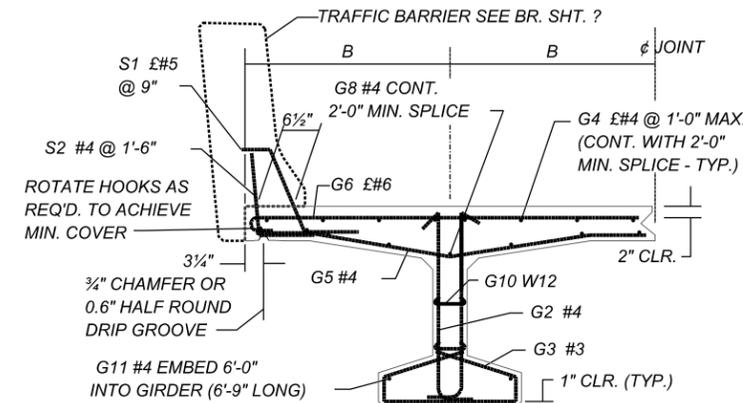
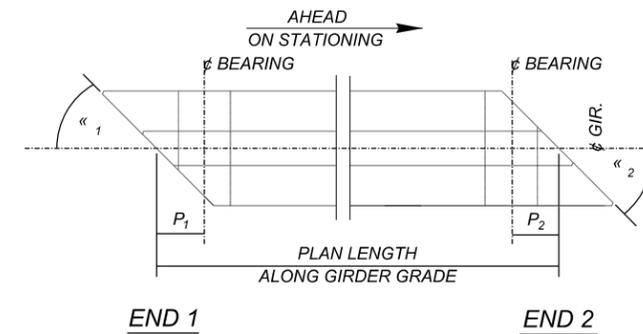


**GIRDER PLAN**

OMIT WELD TIES ON EXTERIOR EDGE OF EXTERIOR GIRDER.  
(STRANDS AND LONGITUDINAL BARS NOT SHOWN)



**PLAN SECTION THROUGH GIRDER WEB**

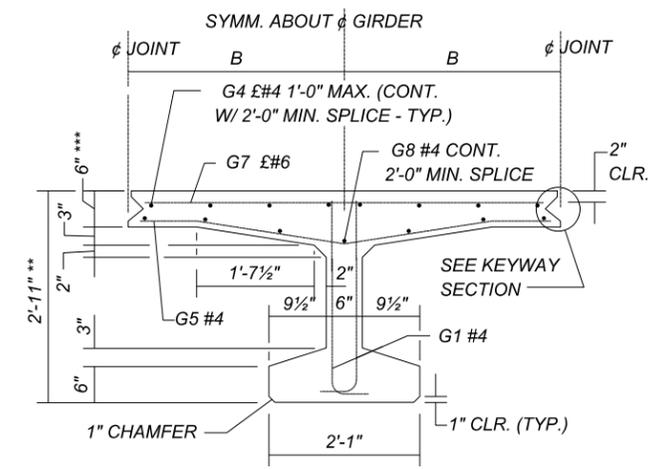


**EXTERIOR GIRDER REINFORCING  
NEAR GIRDER END**

FOR DETAILS NOT SHOWN, SEE INTERIOR GIRDER

△ #3 OR #4 BARS MAY BE USED IN LIEU  
OF W12. FIELD BEND IS OPTIONAL.

£ DENOTES EPOXY COATED



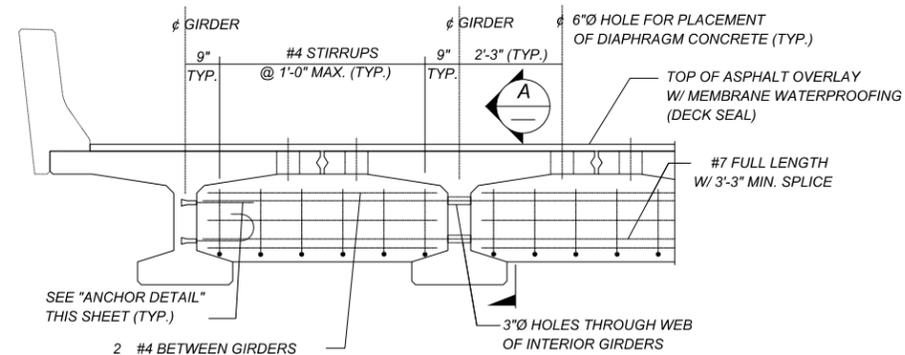
**INTERIOR GIRDER REINFORCING  
NEAR MIDSPAN**

NO.	DATE	APPR.	REMARKS

<b>UTAH DEPARTMENT OF TRANSPORTATION</b> STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION SALT LAKE CITY, UTAH	RECOMMENDED FOR APPROVAL	DATE
	CHAIRMAN STANDARDS COMMITTEE APPROVED	DATE
	DEPUTY DIRECTOR	DATE

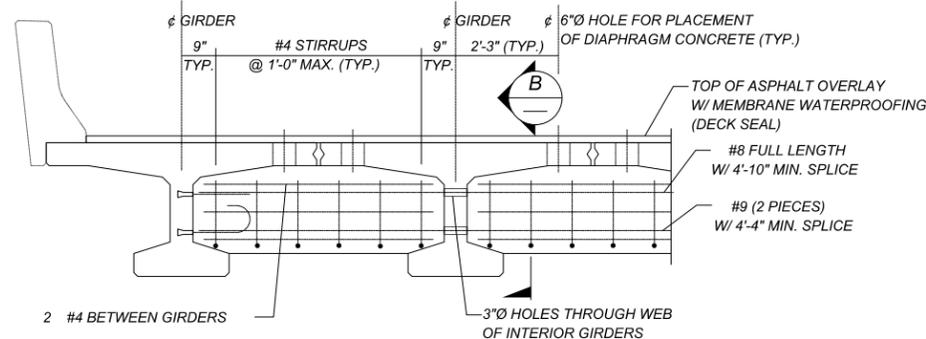
STD. DWG. NO.

**G - 10**



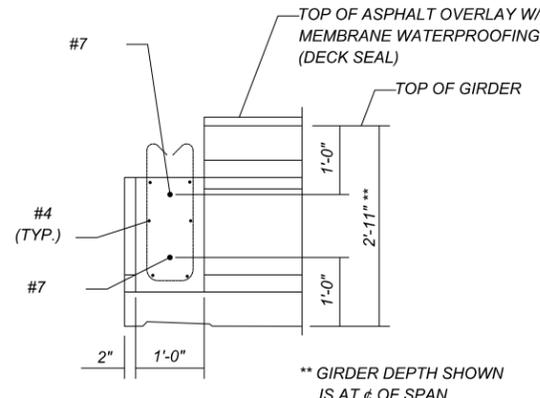
**ELEVATION - TYPICAL END DIAPHRAGM  
AT INTERMEDIATE PIERS**

CONCRETE CLASS 4000, CAST IN PLACE



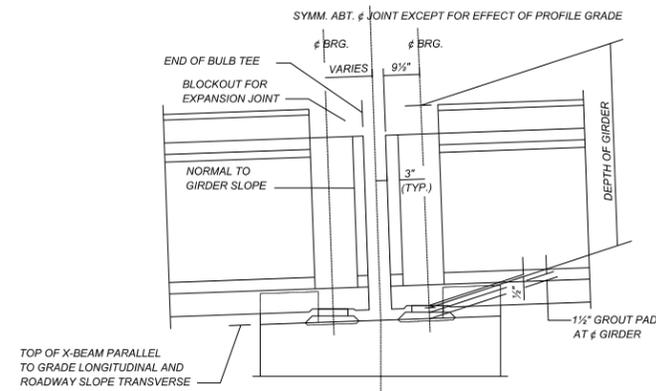
**ELEVATION - TYPICAL INTERMEDIATE DIAPHRAGM**

CONCRETE CLASS 4000, CAST IN PLACE



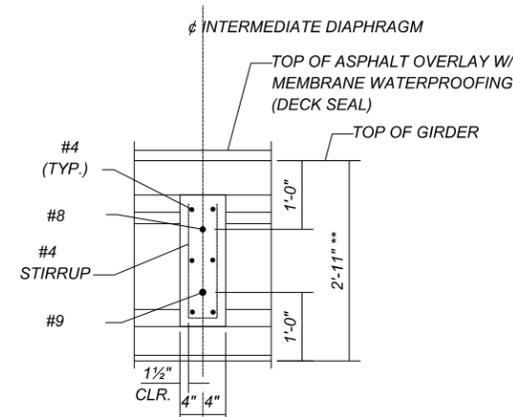
**SECTION A**

LONGIT. DIMENSIONS  
ARE NORMAL TO SKEW

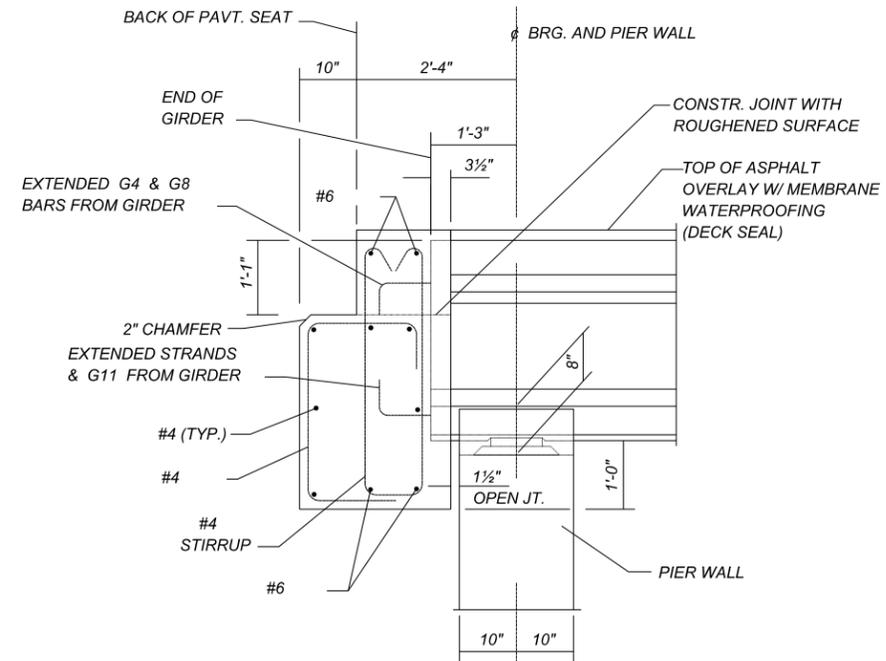


**END DIAPHRAGMS  
AT INTERMEDIATE PIER**

LONGITUDINAL DIMENSIONS ARE NORMAL TO PIER

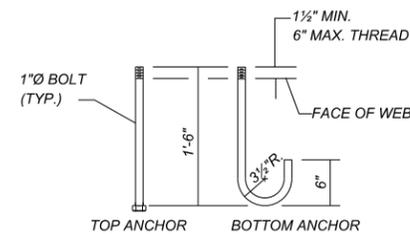


**SECTION B**



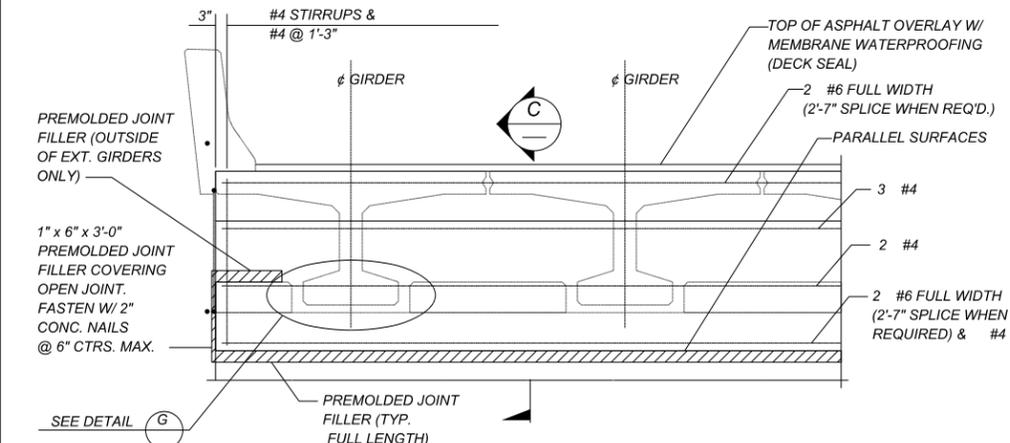
**SECTION C**

ALL LONGITUDINAL  
DIMENSIONS SHOWN  
ARE NORMAL TO  $\phi$  BRG.



**ANCHOR DETAIL**

A.S.T.M. A-307



**ELEVATION - TYPICAL END DIAPHRAGM  
AT END PIERS**

CONCRETE CLASS 4000, CAST IN PLACE

NO.	DATE	APPR.	REMARKS

**UTAH DEPARTMENT OF TRANSPORTATION**  
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION  
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL

CHAIRMAN STANDARDS COMMITTEE  
APPROVED

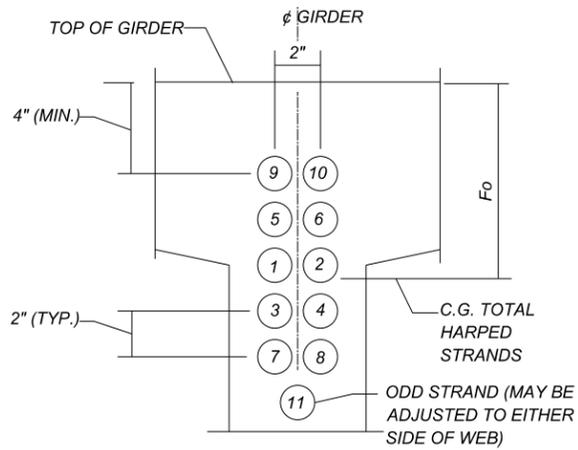
DEPUTY DIRECTOR

DATE

DATE

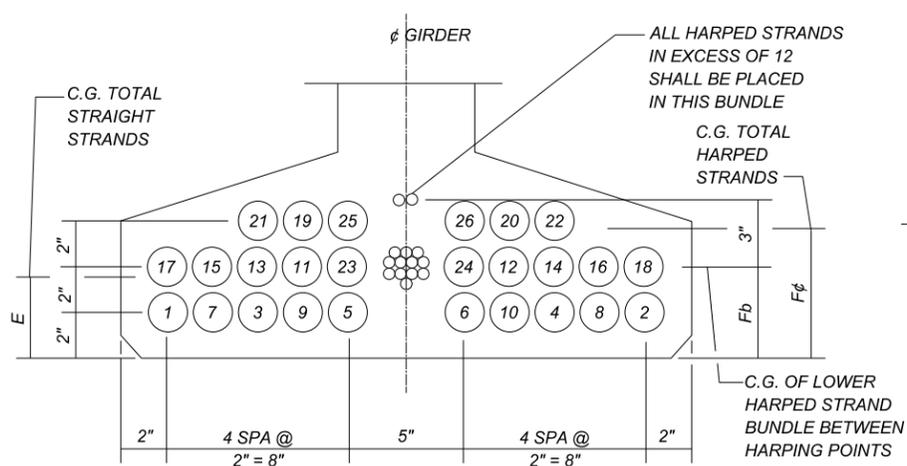
STD. DWG. NO.

**G - 11**



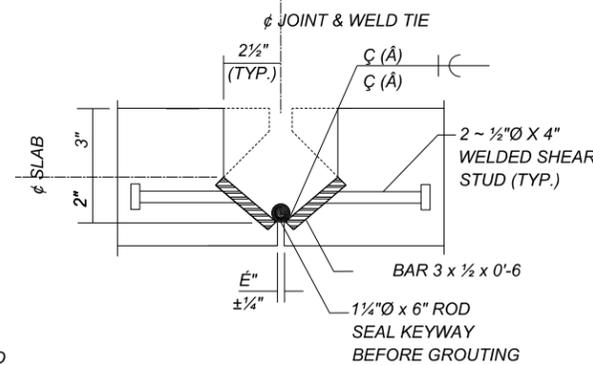
**STRAND PATTERN AT GIRDER END**

HARPED STRAND LOCATION SEQUENCE SHALL BE AS SHOWN 1, 2, ETC.

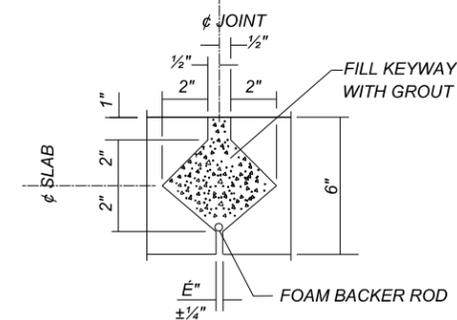


**STRAND PATTERN AT φ SPAN**

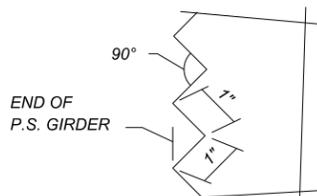
STRAND LOCATION SEQUENCE SHALL BE AS SHOWN 1, 2, ETC.



**SECTION B WELD TIE ALTERNATE #1**

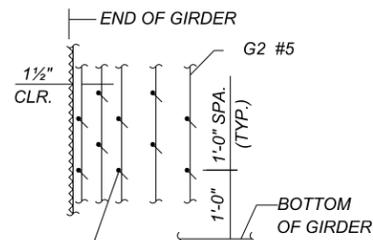


**SECTION A KEYWAY**

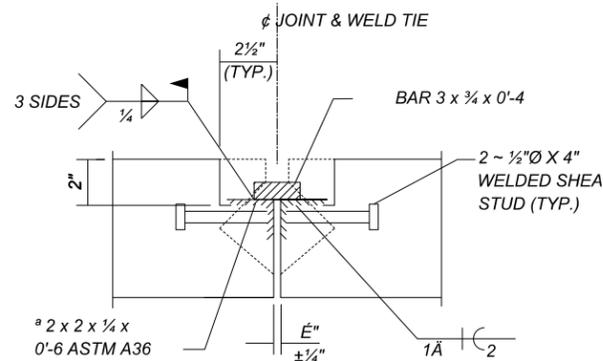


**SAWTEETH DETAILS**

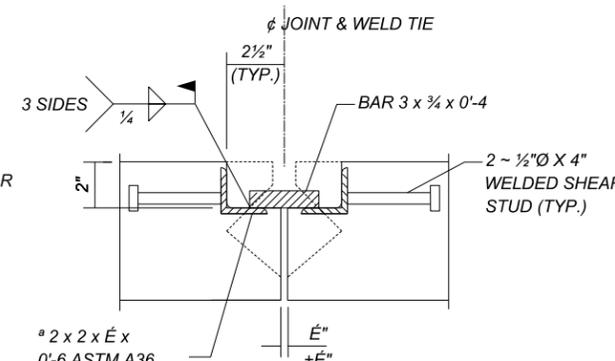
SAWTEETH ARE FULL WIDTH - USE SAWTEETH KEYS FROM BOTTOM OF BOTTOM FLANGE TO BOTTOM OF LOWEST HARPED STRAND



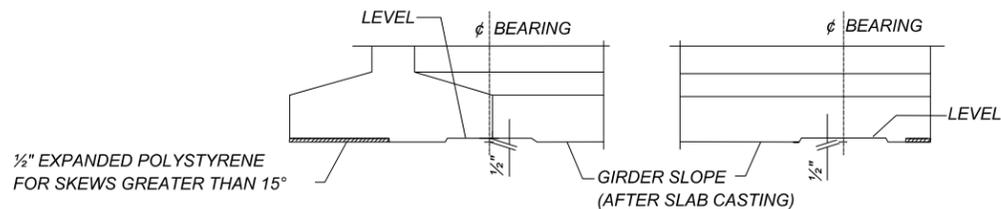
**TIE SPACING DETAIL**



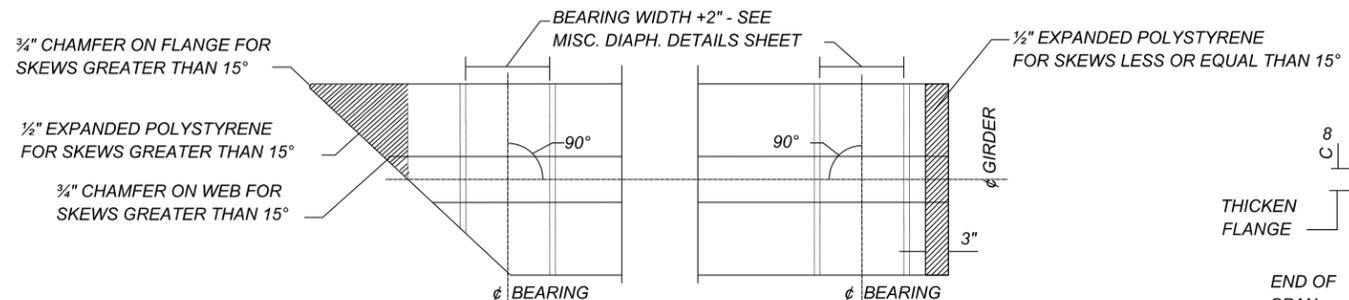
**SECTION B WELD TIE ALTERNATE #2**



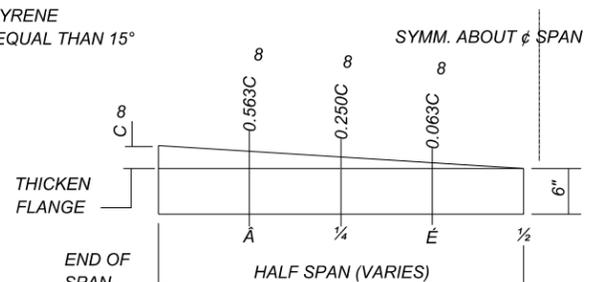
**SECTION B WELD TIE ALTERNATE #3**



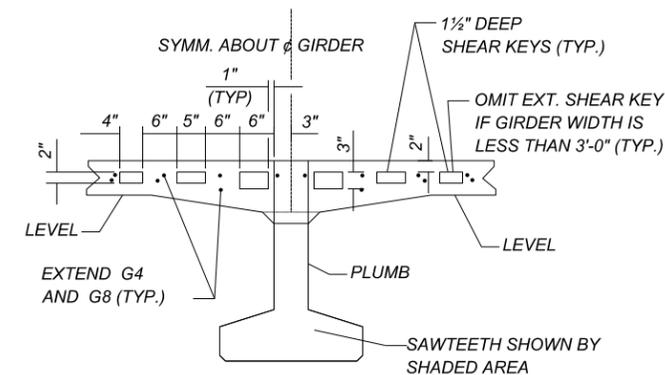
**ELEVATION**



**PLAN - BEARING RECESS & BOTTOM FLANGE SPALL PROTECTION**



**GIRDER FLANGE THICKENING**



REVISIONS		NO.	DATE	APPR.	REMARKS

<b>UTAH DEPARTMENT OF TRANSPORTATION</b> STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION SALT LAKE CITY, UTAH	RECOMMENDED FOR APPROVAL	DATE
	CHAIRMAN STANDARDS COMMITTEE APPROVED	DATE
	DEPUTY DIRECTOR	DATE

STD. DWG. NO. <b>G - 12</b>
--------------------------------